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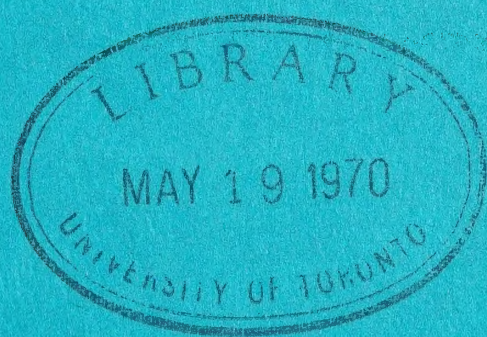
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Steel and Inflation



Prices and Incomes Commission
Ottawa, Canada

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February 1970

Steel and Inflation

Prices and Incomes Commission

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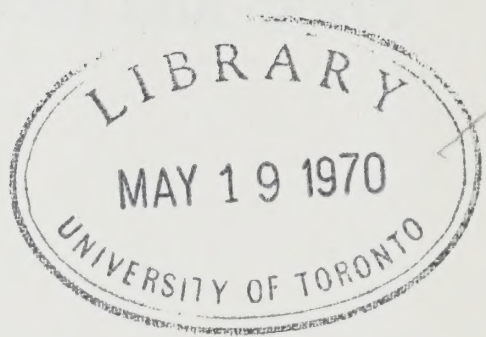


TABLE OF CONTENTS

	Page
Preface	7
Introduction	9
1. The Canadian Steel Industry	11
2. Steel Prices	23
3. Cost of Steelmaking	33
4. Impact of Price and Cost Changes	41
5. Steel and Inflation	45
Statistical Appendix	51

TABLES

	Page
Chapter One	
Table 1-1 - Average Hourly Earnings in Selected Industries, 1953 and 1968	18
Table 1-2 - New Capital Expenditure in the Iron and Steel Industry, Five-year Averages 1950-1969	19
Table 1-3 - Ratio of After-Tax Income to Equity Plus Debt, Revenue and Net Assets for Three Major Companies (Low and High Years 1959-1968)	20
Chapter Two	
Table 2-1 - Cost to Customer and Revenue at Mill - 1/2" thick, 80-90" wide, 240" long, 20,000 pound quantity, G40.4 grade carbon steel plate - Delivered to Toronto from Hamilton and Sault Ste Marie, December 1969	24
Table 2-2 - Rolling Mill Products Price History January 1, 1965-January 1, 1970	27
Table 2-3 - Analysis of Base Price Changes for Hot-Rolled Sheet, Canada and the United States, January 1955-November 1969	30
Table 2-4 - Canadian Prices as a Percentage of U.S. Delivered Prices - Selected Destinations and Products, December 1969	31
Table 2-5 - Origin of Canadian Rolled Steel Imports, 1956 and 1968	32
Chapter Three	
Table 3-1 - Cost of Sales of Rolling Mill Shipments, 1959 - 1968	34
Table 3-2 - Labor Cost per Man Hour Worked in Iron and Steel, 1959 and 1968	36
Chapter Four	
Table 4-1 - Estimated Costs Per Ton of Steel Shipments, 1967-1970	41

CHARTS

	Page
Chapter One	
Chart 1-1 - Steel Capacity and Production, 1953-1968	14
Chart 1-2 - Index of Industrial Production, Iron and Steel Mills, 1953-1969	15
Chart 1-3 - Ratio of After-Tax Income to Equity plus Debt, Revenue and Net Assets for Three Major Companies 1959-1968	21
Chapter Two	
Chart 2-1 - Rolled Iron and Steel Products Price Index Compared to Aggregate Price Indexes, 1956-1969	25
Chart 2-2 - Steel Base Prices - Canada and United States - In January, Selected Years, 1955-1970	29

STATISTICAL APPENDIX

	Page
Table 1-1 - Principal Statistics - Iron and Steel Mills, 1959-1967	52
Table 1-2 - Pig Iron and Raw Steel Capacity of Major Primary Iron and Steel Producers at Jan. 1, 1969	53
Table 1-3 - Production of Pig Iron and Capacity and Production of Raw Steel, 1953 - 1968	54
Table 1-4 - Shipments, Trade and Consumption of Rolling Mill Products, 1953-1968	55
Table 1-5 - Total Mill Shipments of Rolling Mill Products by Major Product Group, 1953, 1959, and 1966-1968	56
Table 1-6 - Apparent Consumption and Domestic Shipments of Rolling Mill Products by Major Product Group, 1953, 1959, and 1966-1968	57
Table 1-7 - Disposition of Domestic Shipments of Rolled Steel Products, 1964 and 1968	58
Table 1-8 - Capital Expenditure in the Iron and Steel Industry, 1950-1969	59
Table 1-9 - Ratio of After-Tax Income to Equity plus Debt, Revenue and Net Assets for Three Major Companies, 1959-1968	60
Table 2-1 - Canadian and United States Base Price Comparisons as at January 1955, 1959, 1963, 1966-1969, and December 1969	61
Table 2-2 - Tariff Items Applicable to Selected Steel Mill Products	62
Table 2-3 - Delivered Prices of Selected Steel Products from Canadian and United States Sources, December 1969	63
Table 2-4 - European Continental Steel Export Price and Canadian Base Price for Plate, January 1957 to January 1958, and January to December 1969	64
Table 3-1 - Indexes of Productivity and Related Data, Iron and Steel Mills, Canada, 1959-1968	65
Table 3-2 - Rates of Growth of Mid-Year Fixed Capital Stock, Iron and Steel Mills, Canada, 1947-1968	66


PREFACE

This study of cost and price developments in the Canadian steel industry is the first report by the Prices and Incomes Commission. It follows from the Commission's terms of reference, included in Order-in-Council PC 1969-1249 of June 19, 1969, which state that the Commission should 'inquire into and report upon the causes, processes and consequences of inflation and ... inform those making current price and income decisions, the general public and the Government on how price stability may best be achieved'.

The terms of reference include the provision that the Commission be authorized to publish, under its own authority, 'specific reports on current developments in costs, prices, productivity and incomes in particular sectors and industries within the economy and for the Canadian economy as a whole'.

The staff members of the Commission who carried out the study were Donald Brazier, John Hague, Thomas Houston and James Kirk, under the direction of F.L.C. Reed.

The Commission would like to acknowledge the excellent co-operation and assistance provided to the research staff by the steel companies, the United Steelworkers of America and officials of the federal and provincial governments.



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INTRODUCTION

On October 24, 1969, the Steel Company of Canada announced price increases averaging approximately six per cent on three major product lines. Other companies in the industry quickly did the same. This was the second round of price increases in the steel industry during 1969; in the spring, prices had been raised on other product lines. In November, a third series of increases was announced which included those products whose prices had been increased in the spring.

The October and November price announcements followed closely major wage settlements between two steel companies and the United Steelworkers of America, calling for increased hourly employment costs of about \$1.30 over the life of a three-year agreement.

To a public already deeply disquieted by five years of rapidly-rising living costs, these events came as a particularly unpleasant shock. With increases of such magnitude being built into the price and cost structure of yet another basic industry, what hope was there of any early break in the seemingly inexorable upward spiral of inflation in Canada?

The public's concern was natural and genuine. Prices were going up and they wanted to know why.

On October 29, 1969, the Prices and Incomes Commission announced that it had decided 'to undertake a fact-finding study of price, wage and cost increases in the Canadian steel industry'.

The announcement went on to state that 'under conditions of general inflation and in the absence of announced criteria for justifiable behavior, it is manifestly unfair to select any one union or any one industry and rule that actions which have become typical are contrary to the public interest. What is not unfair, and may be helpful, is to illustrate for the public as a whole one of many examples of how an entrenched, pervasive inflation is reflected in the wage and price behavior of one among many industries'.

The Commission's objective in this study was, therefore, not to condemn but to inform.

After careful consideration the Commission decided against public hearings in view of their high cost and time-consuming nature. A public inquiry would have involved preparation of formal briefs, hearing views of all interested parties, cross-examination of witnesses and the like. It was the Commission's view that there would be ample opportunity to discuss the facts in open forum once they had been determined and made public. This is in line with the position enunciated in the White Paper, 'Policies for Price Stability', that the Commission's 'hearings and discussions will be in private but its reports will be public'.

In order to complete this report within a relatively-short period, the Commission decided at the outset to concentrate its attention on the steelworks level of the steel industry. Some analysis was also done at the corporate level of the major firms, but no detailed study was attempted of cost and price records for the mining operations of the companies or for their fabricated products which use steel beyond the rolling mill stage.

The Commission was in direct contact with firms accounting for over 90 per cent of industry shipments of rolling mill products but no briefs or prepared statements were solicited. The Commission determined the specific types of information on costs, prices, markets, financial performance and industry structure which it regarded as essential for its purposes, and then went to each company in turn with detailed requests. Meetings were held with executives and research staff of the United Steelworkers and detailed answers were received to a series of questions put to them.

The Commission drew upon a number of sources for statistical data and other research material, including published and unpublished data compiled by the Dominion Bureau of Statistics and other federal government departments. The Commission also made use of standard reference material on the steel industry and consulted a number of outside experts familiar with the Canadian steel industry, including government officials and others.

Much of the data on costs, prices and markets for individual companies was regarded as confidential. Accordingly, the Commission has only shown aggregate figures for a number of companies.

This report is presented in three parts. Chapter 1 contains a broad description of the Canadian steel industry as background for the more detailed discussion which follows. Chapters 2, 3 and 4 analyze steel prices and costs and describe the impact of recent changes. Chapter 5 illustrates the general problem of inflation, using steel as an example.

Chapter 1

THE CANADIAN STEEL INDUSTRY

A summary of the development and performance of the Canadian steel industry for the period 1953 to 1968. It is designed to provide background information for subsequent chapters.

Introduction

The Canadian steel industry is composed of several large integrated firms and a number of specialized or regional producers. The industry has grown rapidly since the Second World War, due largely to changing international market conditions and growth of the domestic market.

Of the 40 leading manufacturing industries operating in Canada, steel is the third largest in terms of value added in manufacturing activity, exceeded only by pulp and paper and motor vehicle manufacturing. In terms of total employment, the steel industry ranks fourth, with 44,000 employees in 1968. Ranked according to the value of shipments of goods of own manufacture, steel is the fifth largest manufacturing industry and accounted for approximately \$1,500,000,000 in sales in 1968. Appendix Table 1-1 summarizes principal statistics of the industry for the period 1959-1967.

In international terms, Canada was the world's 12th largest steel-producing country in 1968, accounting for two per cent of world output. During the last 15 years Canada's steel capacity and output have shown the third highest rate of growth among the large producing nations in the non-Communist world, ranking after Japan and Italy.

Steel is an intermediate product. It is used in fabrication or assembly of final products ranging from nails to high-rise buildings. Virtually all Canadian industries and all private consumers are purchasers of steel or of goods made with steel.

Definition and Structure of the Steel Industry

The Canadian steel industry, or the iron and steel industry as defined by the Dominion Bureau of Statistics, is composed of firms producing pig iron, castings, steel ingots and numerous rolling mill

products. Only small amounts of pig iron and steel ingots are sold outside the industry; rolling mill products constitute the bulk of industry sales.

Rolling mill products are produced in varying size, shape and grade specifications in the following major groups:

- . Semi-finished shapes (blooms, billets and slabs)
- . Rails and track material
- . Wire rod
- . Heavy structurals
- . Bar products (light structurals, bar mill band, rounds, angles, concrete reinforcing bar, etc.)
- . Plate and skelp
- . Hot-rolled sheet and strip
- . Cold-rolled sheet and strip
- . Tin plate
- . Galvanized sheet

Because most rolling mill output is transferred outside the basic steelworks for further fabrication, it is possible to study the primary steel industry separately.

Steel producers can be classified in three groups.

The first includes five integrated producers whose operations extend from pig iron production to rolling mill operations. This group includes the three largest firms of the industry: The Algoma Steel Corp. Ltd. (Algoma), Dominion Foundries and Steel Ltd. (Dofasco), and The Steel Co. of Canada Ltd. (Stelco). These firms are vertically integrated to the extent that they produce much of their raw material requirements in affiliated iron ore and coal mines and fabricate some steel beyond the rolling mill product stage. At the end of 1968 the three largest producers accounted for 85 per cent of the pig iron capacity and 75 per cent of the raw steel capacity of Canada. Individual capacity figures for these companies and for Sydney Steel Corp. (Sysco), the fourth largest integrated company, are shown in Appendix Table 1-2. Cominco Ltd., the smallest of the five integrated producers, manufactures a small volume of pig iron and steel ingot partly for use in the operations of its subsidiary Western Canada Steel Ltd.

The second group of steel producers consists of a number of non-integrated producers. These companies generally produce their raw steel in electric furnaces from scrap metal or purchase raw steel. The largest companies in this group are Lake Ontario Steel Co. Ltd. (Lasco) at Whitby, Ont., and Sidbec, whose subsidiary, Dominion Steel and Coal Corp. Ltd. (Dosco), operates an electric steel furnace plant at Montreal. Atlas Steels Co., Canada's largest speciality steel producer, operates plants at Welland, Ont., and

Tracy, Que. Other smaller plants are located in eastern and central Canada.

Five steel mills are located in Western Canada: Manitoba Rolling Mill Division of Dominion Bridge Co. Ltd. (Selkirk), Interprovincial Steel and Pipe Corp. Ltd. (Regina), the Premier Works of Stelco (Edmonton), and Western Canada Steel Ltd. (Calgary and Vancouver). The products of these plants reflect the composition of regional demand: Merchant bars, reinforcing bars, light structurals, rods, etc. Interprovincial Steel and Pipe produces plate, skelp (for steel pipe manufacture) and hot-rolled sheet and coil.

Included in the third group of producers are two non-integrated pig iron producing establishments, the Quebec Iron and Titanium Corp. at Sorel, Que., and Algoma's Canadian Furnace Division at Port Colborne, Ont. Dosco and Stelco have rolling mill plants at Contrecoeur, Que.

Capacity and Output

Productive capacity and output of the steel industry can be measured at three production stages:

- . The conversion of raw materials (iron ore, coal, coke and limestone) into pig iron;
- . Pig iron and scrap conversion to ingots (commonly called raw steel);
- . The processing of ingots into semi-finished shapes, and then into rolling mill products.

Annual production of pig iron has grown at a rate in excess of eight per cent from 1953-1968. Steel ingot production has grown at the same rate. (Appendix Table 1-3)

Chart 1-1 shows the ratio of raw steel production to capacity. Capacity utilization is affected by general demand conditions and additions to capacity. Output and capacity utilization in 1969 would have exceeded 1968 levels if major work stoppages had not closed the Stelco and Algoma plants for some three months.

The annual rate of increase in total rolling mill product shipments during the years 1953 to 1968 was 7.6 per cent. For individual product categories, annual growth ranges from a high of 10 per cent for the rapidly-growing flat hot-rolled and cold-rolled product groups, to declines in shipments of rails and track material. These data are shown in Appendix Tables 1-4 and 1-5.

Chart 1-2 shows the D.B.S. index of industrial production for iron and steel mills from January 1953 to October 1969. The chart indicates the sensitivity of the steel industry to changing economic conditions. Irregular interruptions caused by work stoppages also show up clearly. The annual rate of growth in the index for the years 1953 to 1968 inclusive is calculated at 6.9 per cent.

Chart 1-1

STEEL CAPACITY AND PRODUCTION
1953 - 1968

(Million Net Tons)

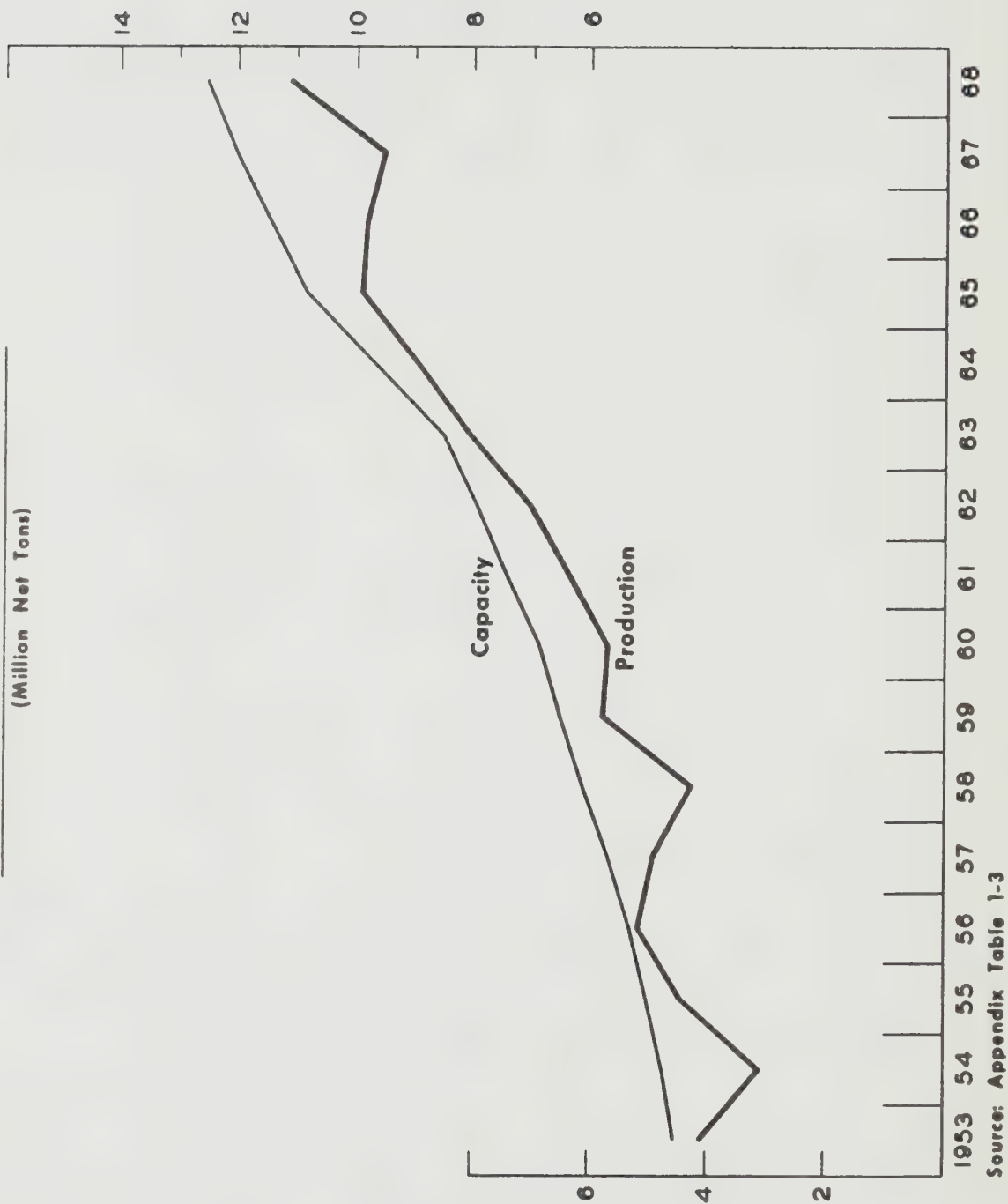
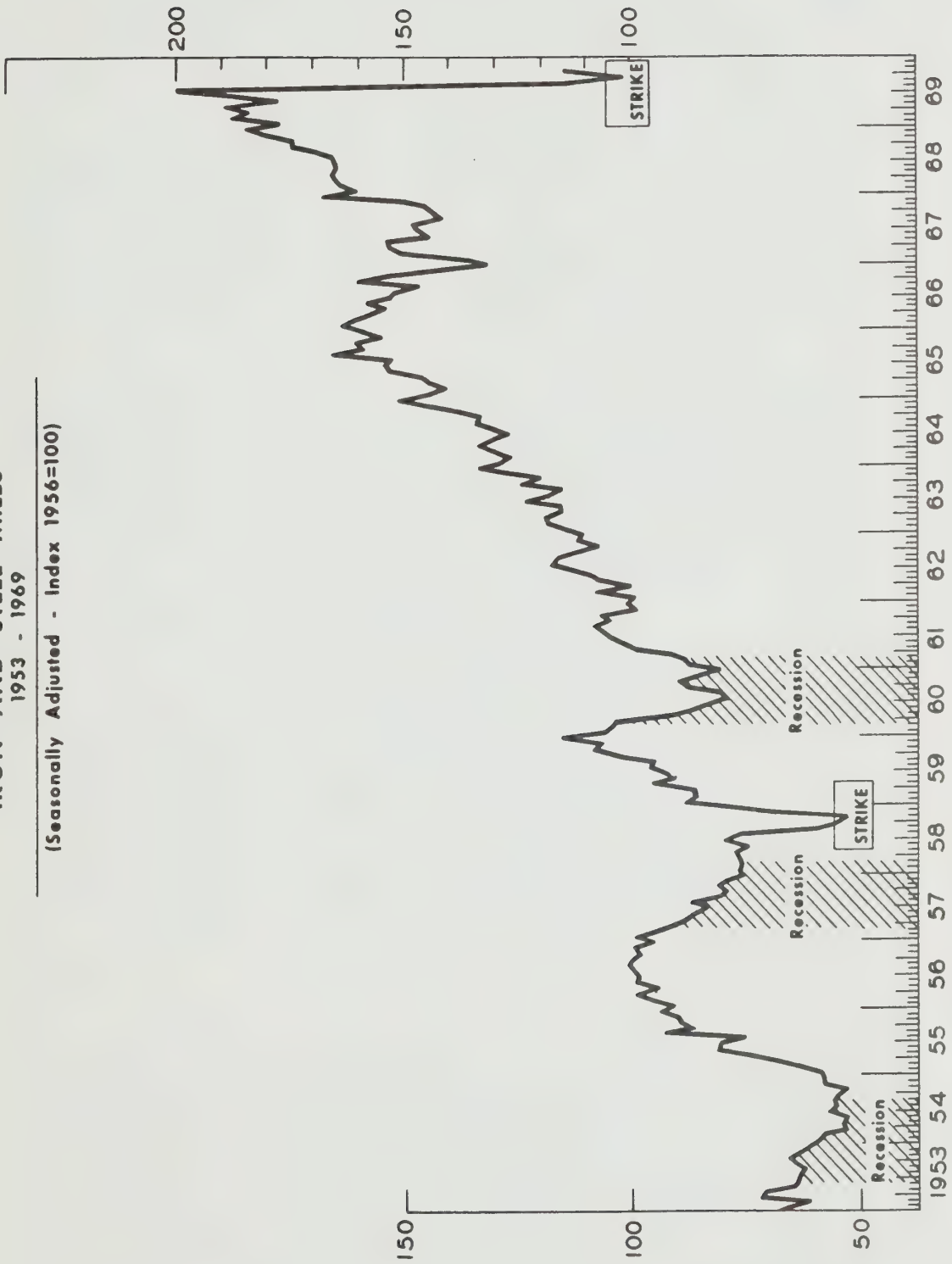


Chart 1-2

INDEX OF INDUSTRIAL PRODUCTION IRON AND STEEL MILLS 1953 - 1969

(Seasonally Adjusted - Index 1956=100)



Source: Dominion Bureau of Statistics

The Canadian Steel Market

The following flows of steel determine the size of the Canadian steel market and the scale of operations for the Canadian steel industry:

- . Shipments by Canadian producers into the domestic market;
- . Imports into Canada; and
- . Exports by Canadian mills.

The first two (domestic shipments plus imports) are usually referred to as apparent consumption of rolling mill products; the word "apparent" is used because inventory data are not available. Domestic shipments plus exports make up the total market for Canadian steel producers and determine the level of their operations. Statistics for the years 1953 to 1968 are summarized in Appendix Table 1-4.

Between 1953 and 1968 apparent consumption of rolling mill products in Canada increased to 8,200,000 tons from 4,000,000, an annual growth rate of 5.6 per cent. This reflected a combination of the relatively-rapid growth in the economy at large, and more particularly the sharp growth of a number of large steel-using industries. Appendix Table 1-6 shows the trend in apparent consumption for individual rolling mill products. There are diverging patterns of growth, depending upon the sectors in which the steel is used. Products such as galvanized sheets and concrete reinforcing bars, used principally in the construction sector where they have built up a high degree of competitive acceptance, enjoy a rapid rate of growth. This is also true for hot-rolled sheet and strip due to sharply-rising requirements of the automotive industries.

Domestic shipments (Appendix Table 1-6) increased to 7,100,000 tons in 1968 from 2,800,000 in 1953, an annual rate of 6.9 per cent. Appendix Table 1-7 shows the disposition of these shipments by major users in 1964 and 1968.

Imports

The replacement of imports by Canadian steel has been a long-run trend in the Canadian steel market. It has been estimated that in the 1920s import steel supplied some 60 per cent of domestic needs. In the early 1950s, imports supplied 20 to 25 per cent of the domestic market. They declined in 1966 and 1967 to 16 per cent and still further to 14 per cent of apparent domestic consumption in 1968.

To analyze the changing role of imported steel in the Canadian market, it is useful to distinguish between two major reasons for imports. First, and most relevant to the Canadian situation from a

long-run point of view, have been 'deficit imports' reflecting: Outright gaps in the Canadian product structure; decisions of the industry not to roll products of a given size and specification; and insufficient Canadian capacity to meet the demand for particular types of products at the high point of the business cycle. In the post-war period, major product gaps have been all but eliminated. There are, however, still instances where Canadian mills may not roll as wide a selection of widths and lengths as their foreign competitors because the size of orders does not permit efficient production runs. Finally, the capacity of the industry - though it has grown rapidly - has not been large enough to satisfy peak demands that appear during periods of strong growth in the economy. This has left imports with a cyclical role and twice during the last 15 years foreign sources of steel were drawn on to supply above normal domestic requirements.

The second major reason for imports is so-called 'price-competitive' imports that emerged in the 1960s. These came from a number of overseas steel-producing industries with flexible pricing policies designed to alleviate pressures of excess capacity. Because of the geographical diversity of the Canadian steel market, price-competitive imports are more likely to occur in areas distant from the major domestic plants.

Over the years 1953 to 1968, replacement of imports has enabled domestic shipments to grow at an annual rate of 6.9 per cent, while apparent consumption grew at the lower rate of 5.6 per cent. Appendix Table 1-6 compares the rates of growth in apparent consumption and in domestic shipments. In absolute terms, the entire increase of 4,200,000 tons of apparent rolling mill product consumption between 1953 and 1968 was supplied by domestic sources. Imports amounted to 1,100,000 tons in both years.

Exports

Exports are the final variable to be taken into account in this discussion of markets for Canadian steel producers. There has been a gradual increase in Canadian steel exports over the last 15 years. In the middle and late 1950s, typical exports averaged 200,000 tons. The volume increased into a range of 600,000 to 900,000 tons between 1962 and 1967, and rose to a sharp new peak of 1,100,000 tons in 1968, partly because of strong inventory demand from the United States in anticipation of a strike.

The ratio of exports to total shipments rose from four per cent in 1953 to an average of 11 per cent between 1962 and 1966. In 1967 it increased to 13 per cent, and then further to 14 per cent in 1968.

The largest customer for Canadian steel is the United States. Latin America is a distant second and relatively-small volumes of export shipments are made to the large steel-producing countries of the European Coal and Steel Community (ECSC) and the European Free Trade Area.

Exports play a relatively-small but growing role in the operations of the Canadian steel industry. Compared ton for ton, Canada's steel trade shows a gradually narrowing excess of imports over exports, which in the unusual circumstances of 1968 gave rise to a small export surplus.

Steel Industry Employment and Earnings

Total employment in the steel industry increased from about 30,000 persons in the early post-war years to 35,000 at the end of the 1950s. Employment is currently estimated to be 44,000. Production and other hourly-rated workers now account for slightly more than 80 per cent of total employment in the industry. The work week for hourly- rated wage earners declined to 40 hours in the early 1950s from 48 hours at the end of the Second World War.

Table 1-1 shows the relationship between average hourly earnings in steel and other major industries for 1953 and 1968.

Table 1-1

**Average Hourly Earnings in Selected Industries
1953 and 1968**

	<u>1953</u>	<u>1968</u>
All manufacturing	\$1.36	\$2.58
Iron and steel	1.70	3.28
Pulp and paper	1.63	3.30
Smelting and refining	1.66	3.22
Motor vehicle assembly	1.69	3.49
Construction	1.44	3.33

Note: Excludes private welfare plans and compulsory government payments.

Source: Dominion Bureau of Statistics

The United Steelworkers of America (U.S.W.) is the certified bargaining agent for the majority of production and maintenance workers. Other unions represent small groups in some plants.

Dofasco steelworks employees are an exception, having retained non-union status.

Capital Investment and Technological Change

After a period of relatively-low capital expenditures in the late 1940s, the Canadian steel industry entered a continuing period of expansion. Table 1-2 shows new capital expenditure by the industry in terms of five-year averages. The peak investment year was 1966, with an outlay of \$211,000,000. Expenditure of \$150,000,000 in 1969 was planned by the industry.

Table 1-2
New Capital Expenditure in the Iron and Steel
Industry, Five-year Averages 1950-1969

(Million Dollars)

1950-54 average	43
1955-59	60
1960-64	123
1965-69	146

Source: Appendix Table 1-8

Other data confirm a high rate of capital accumulation in the steel industry. In addition, Algoma, Dofasco and Stelco have made large investments in iron ore and coal mines and in fabricating plants which are not included in the above data.

The growing scale of operations has enabled the Canadian steel industry to adopt technological improvements at a rapid pace. Examples are the basic oxygen furnace, continuous casting and blast furnace technology. Expansion planned by steel companies for the next several years suggests that the industry will continue to benefit from technological advance.

Capital investment projections of the three largest companies call for aggregate new capital expenditure of \$550,000,000 - \$600,000,000 during the years 1969 to 1972 inclusive, implying new peaks in both 1971 and 1972. In addition, the same three companies expect to spend \$100,000,000 on mining, fabricating and other activities falling outside the boundaries of steelmaking operations. Large expenditures for pollution control equipment were announced recently. In terms of production facilities, plans provide for substantial expansion in blast furnace, basic oxygen furnace and rolling mill capacities, although little of this will come into production until 1971.

The large size of economically-efficient units requires that increases in new capacity come into production suddenly, particularly in blast furnace, raw steel and primary rolling facilities. As a result the various production stages are rarely completely balanced. A large expansion of facilities at one or more production stages may cause a period of low capacity utilization until expansion at other stages and higher demand catch up with the new output potential. The industry considers itself reasonably balanced at present, but it appears that the ratio of raw steel capacity to production during some of the next several years may fluctuate because of these factors.

Financial Performance

A 10-year review of the combined profit performance of Algoma, Dofasco and Stelco has been prepared by relating after-tax income to total revenue, net assets and the sum of shareholders' equity plus long-term debt. The results are shown on the accompanying chart. As would be expected in an industry that is sensitive to cyclical changes in the economy, profitability fluctuates considerably from year to year as indicated in Table 1-3.

Table 1-3

Ratio of After-Tax Income to Equity Plus Debt,
Revenue and Net Assets for Three Major Companies
(Low and High Years 1959-1968)

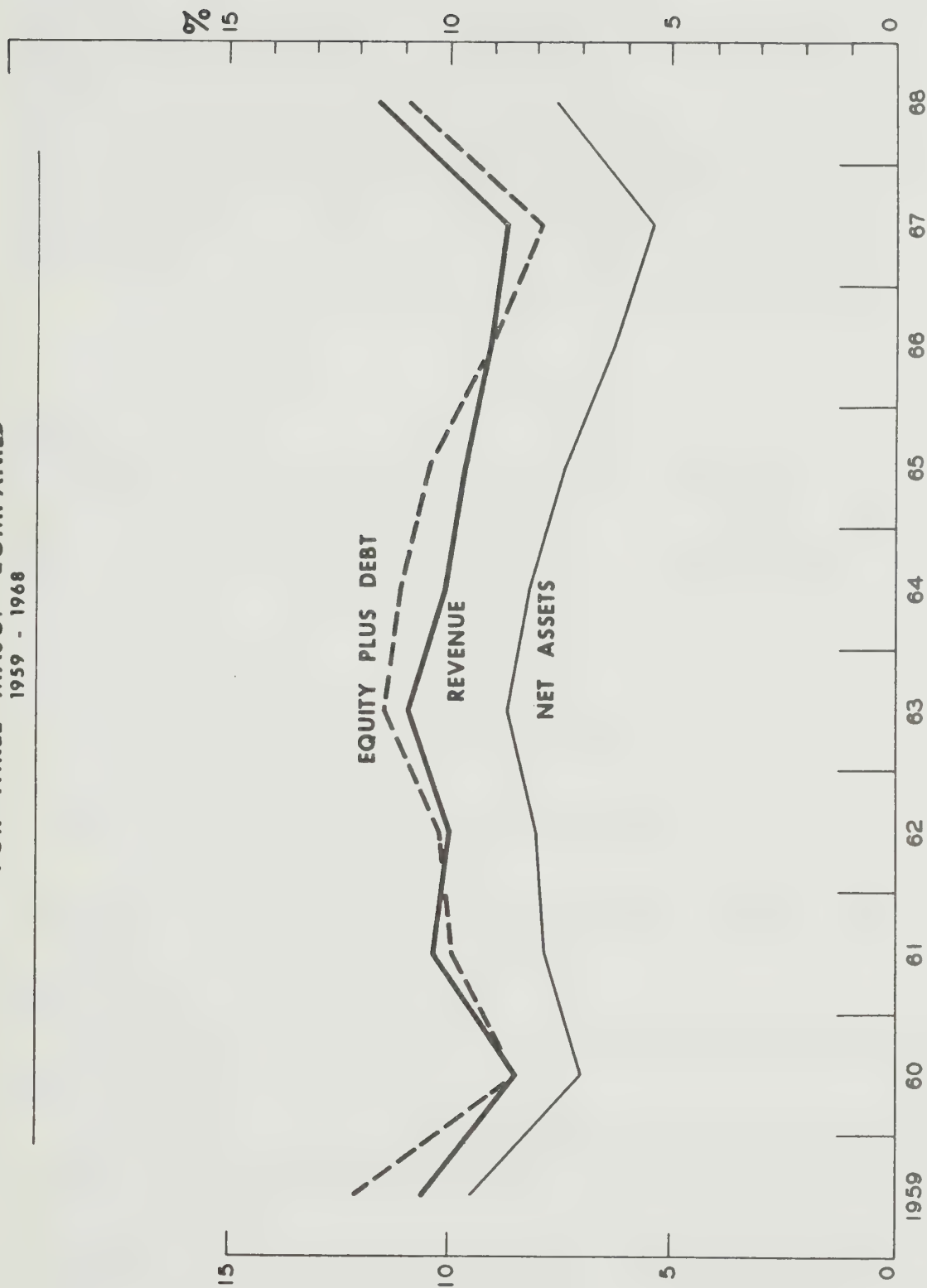
	<u>Low</u>	<u>High</u>	<u>10-year Average</u>
Net Income as Per Cent of:			
- Revenue	8.5 (1960)	11.6 (1968)	10.0
- Net assets	5.4 (1967)	9.5 (1959)	7.4
- Equity and long-term debt	7.9 (1967)	12.1 (1959)	10.1

Source: Appendix Table 1-9

Data for the three largest companies when compared with D.B.S. data for the iron and steel industry as a whole indicate that profit performance by the three largest companies exceeds industry averages. Figures for the years 1965 to 1967 inclusive show that profitability ratios of the steel industry ranked about mid-way in a list of 87 manufacturing industries and slightly below the average of all manufacturing industries. Steel company earnings were

Chart 1-3

**RATIO OF AFTER-TAX INCOME TO EQUITY PLUS DEBT, REVENUE, AND NET ASSETS
FOR THREE MAJOR COMPANIES
1959 - 1968**



Source: Appendix Table 1-9

relatively low in both 1966 and 1967, however, and the comparison would probably be more favorable for the steel industry if years of substantially-higher earning such as 1968 were included.

International comparison of the profitability of steel industries is subject to substantial differences in accounting and taxation systems and variations in the structure of steel industries in different countries. A number of published and unpublished profitability comparisons indicate that the Canadian industry has ranked at or near the top of the list of the world's leading steel producers. This conclusion appears valid for various sub- periods of the 1960s, although in individual years, such as 1966 and 1967, the ranking for Canada would be temporarily lower.

Chapter 2

STEEL PRICES

An examination of trends in domestic and international steel prices with analysis of recent price changes and their impact on steel industry revenues.

Introduction

Changes in the prices of Canadian rolling mill products during 1969 were the largest in more than a decade and resulted in an over-all increase in prices in excess of six per cent. To place these price changes in the context of domestic and international price trends, research was centered on three major areas:

- . The pricing system used by the Canadian steel industry;
- . Trends in Canadian steel prices and the impact of 1969 price changes on the revenue of the steel industry; and
- . Longer-term comparisons of Canadian and U.S. steel prices, along with some comparative analysis of off-shore steel prices.

Marketing methods and various other competitive practices of the Canadian steel industry were also studied.

Steel Pricing

The following factors enter into the price of steel delivered to a user at a given location in Canada:

Base Price. A base price quotation indicates the price at which a steel mill sells f.o.b. mill at its production points. These are prices for broad product groups such as bars, sheet, plate and structurals.

Extras. Additional charges are made above the base price for size, quantity and quality variants. These extras added to the base price form the net price for a specified product. For example, the base price for carbon steel plate in December, 1969, at Hamilton, Ont., was \$117 per ton. Specified as 1/2" thick, 80-90"

wide, 240" long, 20,000 pound quantity, G40.4 grade, carbon steel plate, the net price was \$125 per net ton.

Freight. Freight costs are not generally included in the above prices and can be a significant component in the delivered price paid by steel customers. Any mill seeking to sell outside the territory in which it has a freight advantage would have to absorb all or part of freight costs in order to maintain a competitive price. Table 2-1 illustrates the effect of freight absorption on revenue to the producer.

Table 2-1

Cost to Customer and Revenue at Mill -
1/2" thick, 80-90" wide, 240" long, 20,000 pound
quantity, G40.4 grade carbon steel plate -
Delivered to Toronto from Hamilton and Sault
Ste Marie, December, 1969

	<u>Hamilton Ontario</u>	<u>Sault Ste Marie Ontario</u>
<u>Cost to Customer</u>		
Base price plus extras	\$ 125.00	\$ 125.00
Plus freight to Toronto (truck rate)	+ 2.40	+ 11.20
Minus freight absorbed by mill		- 8.80
	<u>\$ 127.40</u>	<u>\$ 127.40</u>
<u>Revenue at Mill</u>		
Base price plus extras	\$ 125.00	\$ 125.00
Minus freight absorbed		- 8.80
	<u>\$ 125.00</u>	<u>\$ 116.20</u>

Source: Prices and Incomes Commission

Algoma, the Sault Ste Marie supplier, calculates an f.o.b. mill price for Toronto sales of \$116.20 per ton which is equivalent to the Sault Ste Marie price of \$125 per ton less the \$8.80 freight differential into Toronto compared with freight from Hamilton. Thus in practice, the total cost to the customer is the base price, plus extras, plus freight from the nearest mill rolling the required steel product.

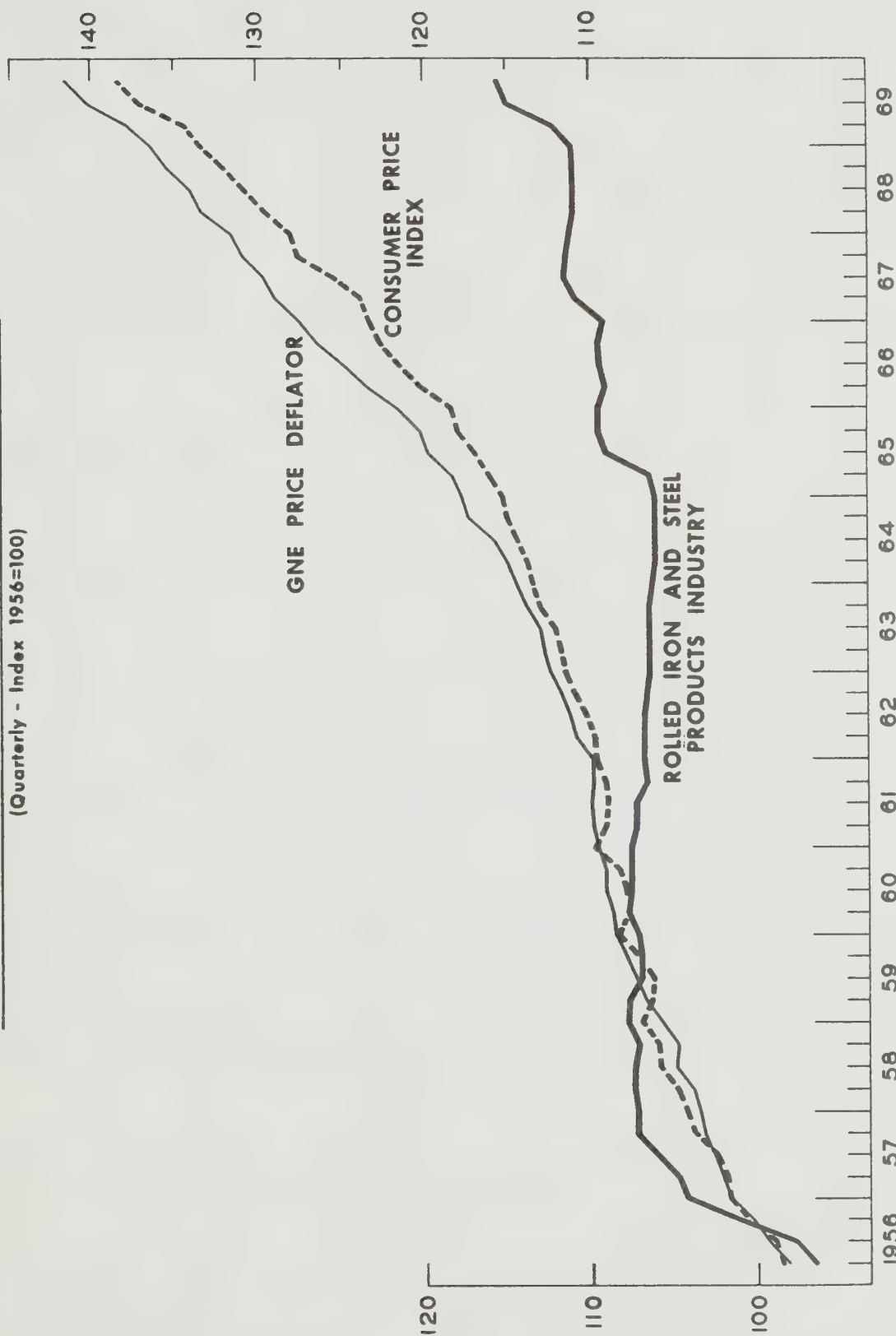
The pricing system described above applies to most steel producers. Sydney Steel and Western Canada Steel differ. The

Chart 2-1

ROLLED IRON AND STEEL PRODUCTS PRICE INDEX COMPARED TO AGGREGATE PRICE INDEXES

1956 - 1969

(Quarterly - Index 1956=100)



Source: Dominion Bureau of Statistics

former sells much of its output on a contract basis while the latter generally follows European export prices.

In the case of imports, two additional factors enter price computations and comparisons. The exchange rate for the Canadian dollar has to be taken into account. (For an illustration see Appendix Table 2-1). The tariff also has to be added in order to complete the comparison between imported and domestic steel. (See Appendix Table 2-2 for major steel tariff items).

Steel Price Trends in Canada and 1969 Price Increases

Chart 2-1 shows the D.B.S. industry selling price index for the rolled iron and steel products industry from January, 1956, to November, 1969, inclusive. Following a sharp rise in 1956 and early 1957, prices were virtually stable until 1965. Prices on most rolling mill products were increased in 1965 by approximately \$5 per ton, an increase of almost four per cent. Steel demand was strong in 1965 and cost and price pressures attributable to excess demand were becoming evident throughout the economy.

Rolling mill product prices were stable in 1966 but most of these prices were increased again in early 1967 by about \$4 per ton. Steel demand softened in 1967 and output and profits of steel producers declined. Prices were generally unchanged in 1968. The largest and most widespread price increases in more than a decade took place in 1969. Prices of semi-finished shapes, bar products, plate and structurals were raised in the spring, although tin plate base prices were fractionally reduced. Prices on hot-rolled, cold-rolled and galvanized sheet and strip were increased in October, 1969, shortly after new wage settlements in the industry. In November a further series of price increases was announced for those products whose price had been increased in the spring. Price changes on individual products varied and ranged as high as 11 per cent on semi-finished carbon shapes. The total effect of 1969 price movements was an increase averaging slightly over six per cent on all rolling mill products. Base price changes during the last five years are summarized in Table 2-2.

A detailed presentation of price extras is not shown because of their number and complexity. Significant increases in some price extras did occur in 1969 and these are taken into account in revenue projections.

Increases in mill revenues attributable to changes in base and extra prices during 1969 were calculated for each major product group shown in Table 2-2. Revenue increases were then multiplied by forecast sales volumes of the three largest producers to arrive at revenue generated by the price increases. The weighted change in

TABLE 2-2

ROLLING MILL PRODUCTS PRICE HISTORY JAN. 1, 1965 — JAN. 1, 1970

\$ Per Ton Unless Indicated
F.O.B. Hamilton Unless Indicated

Product	Base Price Jan. 1, 1965	Change	Base Price Jan. 1, 1967	Change	Base Price Jan. 1, 1969	First Half Change	Second Half Change	Base Price Jan. 1, 1970	% Change	
									1969—1970	1965—1970
Blooms and Billets										
—Carbon.....	97.00	5.00	102.00	5.00	107.00	5.00	7.00	119.00	11.2	22.7
—Alloy.....	115.00	5.00	120.00	5.00	125.00	3.00	8.00	136.00	8.8	18.3
Bar Products										
Bars and Small Shapes										
—Carbon (Merchant).....	108.00	5.00	113.00	—	113.00	6.00	5.00	124.00	9.7	14.8
—Carbon (Special).....	117.00	7.00	124.00	5.00	129.00	5.00	7.00	141.00	9.3	20.5
—Alloy.....	128.00	5.00	133.00	5.00	138.00	3.00	8.00	149.00	8.0	16.4
Bar Mill Band										
—Carbon (Merchant).....	108.00	5.00	113.00	—	113.00	6.00	5.00	124.00	9.7	14.8
—Carbon (Special).....	117.00	7.00	124.00	5.00	129.00	5.00	7.00	141.00	9.3	20.5
—Alloy.....	161.00	5.00	166.00	—	166.00	3.00	8.00	177.00	6.6	9.9
Structurals										
—Angles and Zees.....	108.00	5.00	113.00	—	113.00	6.00	4.00	123.00	8.9	13.9
Tie Plate.....	127.00	5.00	132.00	5.00	137.00	6.00	7.00	150.00	9.5	18.1
Plate										
Carbon.....	109.00	—	109.00	—	109.00	4.00	4.00	117.00	7.3	7.3
Tin Mill Products¹ (\$ Per Base Box)										
Electrolytic—Single Red.....	7.85	0.35	8.20	0.35	8.55	(0.40)	—	8.15	(4.7)	3.8
Electrolytic—Double Red.....	6.40	0.35	6.75	0.35	7.10	0.15	—	7.25	2.1	13.3
Black—Single Red.....	7.05	0.25	7.30	0.35	7.65	(0.40)	—	7.25	(5.2)	2.8
Black—Double Red.....	—	—	6.45	—	6.45	(0.10)	—	6.35	(1.5)	n.a.
Galvanized²										
Standard Coating.....	134.00	4.00	138.00	2.00	140.00	—	9.00	149.00	6.4	11.2
Culvert.....	140.00	4.00	144.00	—	144.00	—	6.00	150.00	4.2	7.1
Spangle Coating.....	134.00	4.00	138.00	6.00	144.00	1.00	9.00	154.00	6.9	14.9
Wiped Coating.....	132.00	4.00	136.00	1.00	137.00	—	8.00	145.00	5.8	9.9
Hot Rolled²										
Sheet.....	99.00	4.00	103.00	4.00	107.00	—	7.00	114.00	6.5	15.2
Strip.....	100.00	4.00	104.00	3.00	107.00	—	7.00	114.00	6.5	14.0
Skelp.....	100.00	—	100.00	—	100.00	—	7.00	107.00	7.0	7.0
Cold-Rolled²										
Sheet.....	127.00	5.00	132.00	4.00	136.00	—	8.00	144.00	5.9	13.4
Strip ≤ 0.80".....	127.00	5.00	132.00	6.00	138.00	—	10.00	148.00	7.3	16.5
Strip > 0.80".....	133.00	5.00	138.00	6.00	144.00	—	4.00	148.00	2.8	11.3
Structural Shapes										
F.O.B. Sault Ste. Marie.....	110.00	5.00	115.00	4.00	119.00	4.00	4.00	127.00	6.7	15.5

¹ Pricing method for tin mill products was changed to a base plus system on April 1, 1969. While some base prices were revised downward, the net effect of this change is estimated to be a three per-cent increase. Tin mill product prices are based on 12,000 pound coils and 0.25 coating on electrolytic. Basic weights are 75 pounds for single reduced and 55 pounds for double reduced.

² Extra prices applicable to galvanized, hot-rolled, and cold-rolled sheet and strip increased in fall of 1969. Major changes were in length extras. The effect ranges from an estimated \$0.50—\$2.50 per ton depending on product.

Source: Prices and Income Commission.

1970 mill revenue is calculated at \$9.20 per ton of rolling mill product sales.

Steel companies commonly cite cost increases as the prime reason for price increases. The industry's environment in 1969, however, was conducive to price increases regardless of cost factors. Excess capacity, which had plagued the continental European industries in recent years, disappeared in the face of strong demand in early 1969. European and Japanese export steel prices increased sharply, significantly reducing the intensity of off-shore competition in the Canadian market. U.S. steel prices also rose in 1969. At the same time Canadian demand remained strong after a record year in 1968.

International Price Competition and Comparisons

To provide a perspective of longer-term trends in Canadian steel prices in relation to international price movements two types of price comparison have been made:

- . Canadian base price trends compared with United States base prices, adjusted for differences in exchange rates; and
- . Current prices in Toronto, Montreal and Vancouver for steel from Canadian and United States sources.

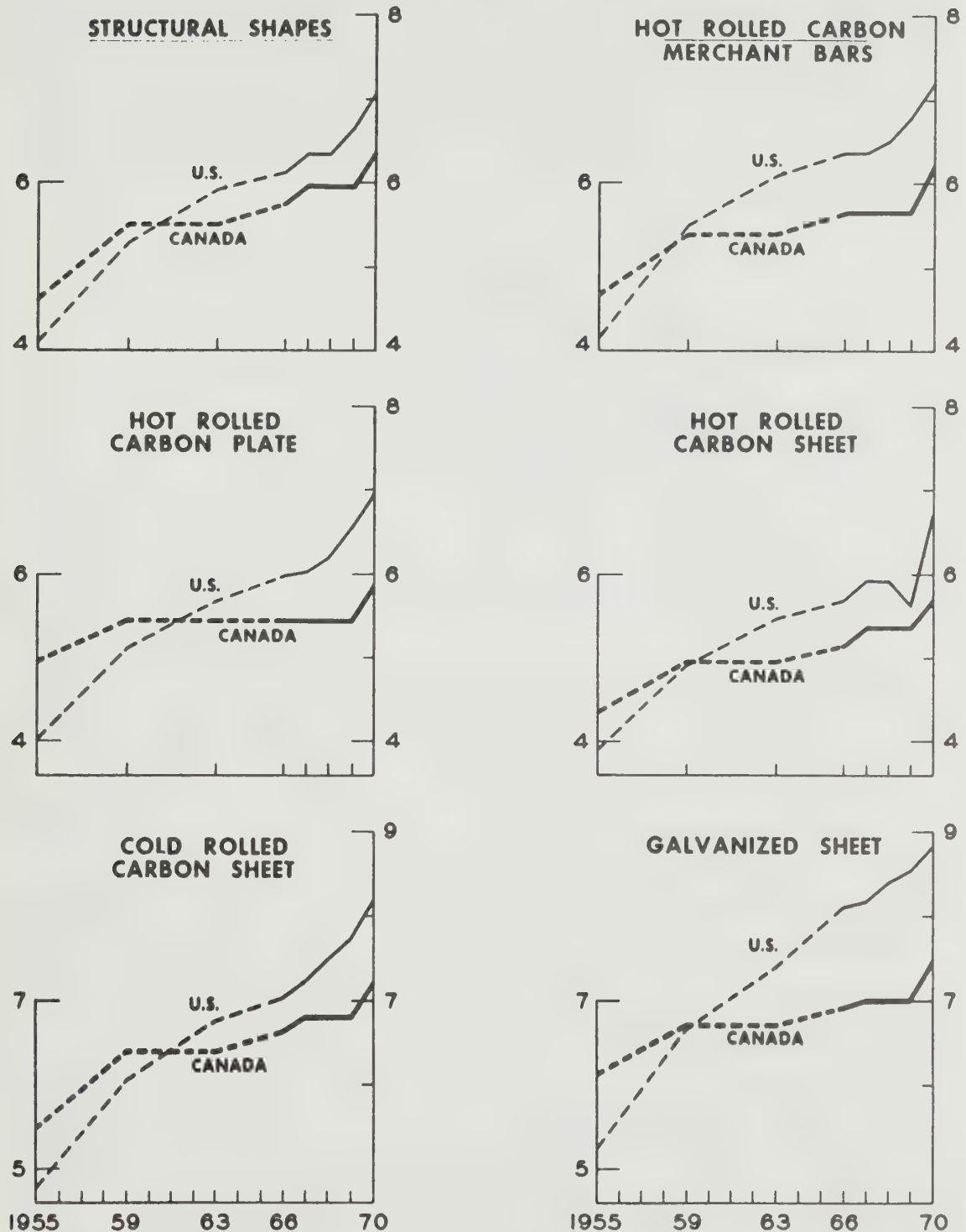
Ideally, analysis should include a comparison between Canadian prices and those of imports from Japan and European Coal and Steel Community countries which are leading suppliers of imported steel in Canada. Published prices at point of export tend to fluctuate widely and actual transaction prices may depart significantly from the published prices. Also transportation costs from off-shore sources cannot be computed with sufficient precision to permit a comparative analysis. It is therefore difficult to make definitive comments on the competitive position of off-shore steel in the Canadian market.

Canadian base prices were substantially higher than U.S. prices until after the Second World War. The differential narrowed during the 1950s and by the beginning of 1959 Canadian prices were almost equal to those in the United States (Chart 2-2). The reduced premium on the Canadian dollar and the eventual devaluation of the Canadian dollar in 1962 changed the Canadian-U.S. price relationship significantly. Thus at the beginning of 1963, without any actual change in base prices, Canadian prices for all product groups were below those in the United States. Canadian base prices declined relative to U.S. base prices between 1963 and

Chart 2-2

STEEL BASE PRICES - CANADA AND UNITED STATES In January, Selected Years, 1955 - 1970

(Canadian Dollars per Cwt.)



Source: Appendix Table 2-1

early 1969. In 1969 the price changes in the two countries were approximately the same.

The following example illustrates the trend in Canadian and U.S. prices. Between January, 1955, and the end of 1969 the Pittsburgh, Pa., base price for hot-rolled sheet expressed in Canadian dollars rose by \$54.20 per ton, while the Hamilton, Ont., base price rose by \$27 per ton (Table 2-3). As a result, the U.S. base price which was \$8.80 per ton lower than the Canadian price in 1955 was \$18.40 per ton higher at the end of 1969. The composition of the price change includes \$15 because of larger price increases in the U.S. and \$12.20 because of a decline in the Canadian exchange rate.

Table 2-3

Analysis of Base Price Changes for Hot-Rolled Sheet
Canada and the United States
January 1955 - November 1969

.Base price changes, January 1955 to November 1969:

U.S. price change in Canadian dollars per ton	54.20
Canadian price change in Canadian dollars per ton	- 27.00
Decline in Canadian vs U.S. base price	<u>27.20</u>

.Canadian-U.S. base price differentials (Canadian dollars):

January 1955- Amount by which U.S. price was lower	8.80
November 1969- Amount by which U.S. price was higher	+ 18.40
Decline in Canadian vs U.S. base price	<u>27.20</u>

.Composition of decline in Canadian base price relative to U.S. price (Canadian dollars):

Price changes	15.00
Exchange rate movements	+ 12.20
Total	<u>27.20</u>

Source: Prices and Incomes Commission

Table 2-4 shows the ratio of Canadian to United States prices in December, 1969, at Toronto, Montreal and Vancouver, comparing prices from the closest Canadian mill with those from the nearest U.S. mill. These price ratios incorporate price extras, the exchange rate, tariffs and transportation costs.

At Toronto and Montreal delivered prices from Canadian mills are 17.9 to 25.5 per cent lower than from corresponding U.S. sources depending upon product. In Vancouver the range by which Canadian prices are lower is 13.5 to 19.5 per cent. The data for this table are shown in Appendix Table 2-3.

Table 2-4
Canadian Prices as a Percentage of U.S.
Delivered Prices
Selected Destinations and Products
December 1969

	Delivered to		
	<u>Toronto</u>	<u>Montreal</u>	<u>Vancouver</u>
Heavy structural, 12" x 27" WF	82.1	78.5	79.0
Hot-rolled sheet, 48 x .1345 x 240" commercial quality pickled	77.1	74.5	79.1
Cold-rolled sheet, 48 x .0299 x 120" commercial quality	76.6	76.1	80.5
Galvanized steel sheet, coils 36" wide 24 GSG, .0276" thick, commercial quality	75.4	75.2	81.0
Tin plate sheets, 80 lb. base weight .25 coating, over 29" to 33 1/2" wide	79.4	79.6	86.5

Note: The above percentages are based on the Canadian mill with the lowest delivered price at a given destination, since other mills would have to meet this price under normal competitive conditions.

Source: Appendix Table 2-3.

This analysis gives an indication of the degree to which U.S. steel has lost its competitive position in the Canadian market. Table 2-5 shows the relative decline in imports from the U.S. and the gains made by imports originating in Japan and the ECSC countries.

Table 2-5
Origin of Canadian Rolled Steel Imports
1956 and 1968

	Per Cent of Total Imports	
	1956	1968
United States	72	28
ECSC countries	15	33
Japan	1	16
United Kingdom	10	13
All other countries	2	10
	<u>100</u>	<u>100</u>

Source: Dominion Bureau of Statistics

The increasing share of Canadian imports supplied by ECSC countries and Japan may be explained primarily by the relative price competitiveness of steel from these sources. The price for steel plate from Europe provides an example. Appendix Table 2-4 shows the quoted European export price for plate, f.o.b. Antwerp, Belgium, in January from 1957 to 1968, and monthly for 1969. Assuming a total tariff and ocean transportation cost of \$25 per ton, European steel plate was price competitive in the Eastern Canadian market during recent years. Essentially the same price trends occurred for other rolled steel products. Sharply higher prices beginning in February, 1969, have made European steel uncompetitive in the Canadian market at the present time.

Japanese export prices display movements similar to those of Europe. However, the high overland transport cost from Ontario mills tends to facilitate Japanese competition in Western Canada. Long shipping distances from Japan limit Japanese competition in Eastern Canada.

Chapter 3

COST OF STEELMAKING

An examination of costs in the iron and steel industry, with trends in costs over the last decade.

Introduction

Steel production costs have been examined on three levels, starting with the entire industry, then dropping down to the steelworks level and finally to broad product groups. Considerable attention has also been given to costs of raw materials and supplies. The main emphasis, however, is on *unit costs per ton* of rolled steel. Increasing yield and efficiency in the use of materials offset in varying degrees the extent to which higher purchase prices are charged by suppliers.

The general cost structure is summarized first, following which costs of raw materials, labor, capital and other items are shown as unit costs per ton of rolling mill products over a 10-year period. The outlook for costs in 1970 is dealt with at the end of the chapter.

Although cost data have been developed primarily from information supplied by the three largest firms, their experience over the last decade can be regarded as generally typical for the industry as a whole.

Trends in Unit Costs Per Ton of Steel Products

The three largest companies account for approximately 80 per cent of Canadian rolled steel product shipments. Sufficient data were provided by these firms to allow calculation of a 10-year history of costs per ton. Mining, fabricating and other activities not directly related to production of rolling mill shipments are excluded. The results are summarized in Table 3-1.

Important trends are apparent from the table. Total raw material costs per ton declined slightly over the period. At the same time unit labor costs increased. These two items make up approximately 70 per cent of total costs. From 1959 to 1968 combined labor and raw material costs increased from \$84.60 to \$87.00 per ton or less than three per cent. During the same period all other costs rose by one-third.

TABLE 3-1

COST OF SALES

OF ROLLING MILL SHIPMENTS

1959-1968

(Dollars Per Ton)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Manufacturing Costs										
Materials.....	\$ 51.50	\$ 52.20	\$ 49.70	\$ 50.40	\$ 49.10	\$ 49.40	\$ 49.70	\$ 48.90	\$ 49.40	\$ 50.20
Labor	33.10	34.70	32.10	32.60	31.30	30.70	32.60	35.90	38.80	36.80
Utilities & Fuels.....	4.60	5.00	5.10	5.30	5.50	5.80	6.50	6.70	6.80	6.20
Maintenance & Operating Supplies.....	10.70	9.90	9.50	10.50	9.70	10.90	11.30	12.30	11.80	12.10
Sundry	1.60	1.90	1.70	1.90	2.00	2.60	2.90	3.00	3.50	3.20
Sub-Total	\$101.50	\$103.70	\$ 98.10	\$100.70	\$ 97.60	\$ 99.40	\$103.00	\$106.80	\$110.30	\$108.50
Other Costs										
Depreciation.....	\$ 6.00	\$ 7.10	\$ 7.50	\$ 7.60	\$ 7.40	\$ 7.50	\$ 7.80	\$ 8.70	\$ 9.60	\$ 9.00
Sales & Administration.....	3.00	3.60	3.10	3.30	3.40	3.40	3.70	4.20	4.60	4.80
Sundry	2.10	2.00	2.10	1.90	1.30	1.90	2.80	2.90	2.80	2.30
Sub-Total	\$ 11.10	\$ 12.70	\$ 12.70	\$ 12.80	\$ 12.10	\$ 12.80	\$ 14.30	\$ 15.80	\$ 17.00	\$ 16.10
Total Cost of Sales.....	\$112.60	\$116.40	\$110.80	\$113.50	\$109.70	\$112.20	\$117.30	\$122.60	\$127.30	\$124.60

Source: Prices and Incomes Commission

Raw Materials and Supplies

Iron ore is the most important single item under this heading, accounting for about 20 per cent of manufacturing costs in 1968. Each of the three largest companies has developed iron mines and pelletizing operations. They now purchase only a small portion of their requirements on the open market. Only minor changes were made in iron ore prices during the decade 1959-68, although scrap prices moved up and down considerably. Scrap prices averaged around \$27 per ton in 1968 compared to \$38-\$40 in 1959 and 1965. The combined ore and scrap cost per ton of steel shipped was approximately the same in 1959 and 1968.

Delivered costs of coal have moved up by 12-15 per cent since 1959 and now are in the \$12 per ton range. Nevertheless, due to pelletization of ore and improved blast furnace technology, coal costs per ton of steel have declined. Most of the coal used in the Canadian steel industry is imported from the United States. As in the case of ore, the larger Canadian companies have interests in coal mining operations.

Iron ore, scrap and coking coal comprise about three-quarters of total raw material costs. The balance consists of fire brick and other refractories, alloy and coating metals and a variety of miscellaneous items. Their costs per ton fluctuated considerably during the 10-year period. Total raw material costs declined by \$1.30 per ton of rolling mill products between 1959 and 1968, in spite of generally higher purchase prices. Improved technology and efficiency in steelmaking more than compensated for higher prices charged by raw material suppliers.

Labor Cost

In this report the term labor cost is defined as the sum of four items:

1. Pay for time worked
2. Pay for time not worked (e.g. holidays, annual vacations)
3. Private welfare plans
4. Compulsory government payments (e.g. unemployment insurance, workmen's compensation, Canada Pension Plan, Quebec Pension Plan)

This list includes costs of both hourly-paid and salaried employees.

There is no regularly published report of total labor costs for the steel industry. D.B.S. provides data on wages and salaries paid, but the numerous fringe benefits and other employee-related costs

are not given on a basis which permits historical analysis. Therefore, it was necessary to develop new labor cost data which include the four items listed above.

It is important to note that a substantial portion of the economic gains secured by steel industry employees in the last 10 years has been in the form of deferred pension income and supplementary fringe benefits not classified as wages and salaries. A downward bias in labor cost will result, therefore, if wages and salaries are considered alone. Table 3-2 shows the four main elements of labor cost per hour in 1959 and 1968. Pay per hour for time worked increased by 38 per cent while total labor cost per hour increased by 51 per cent.

Labor cost per hour has been translated into labor costs per ton as shown in Table 3-1. Labor cost per ton of rolling mill shipments increased from \$33.10 to \$36.80 between 1959 and 1968. Labor cost per ton actually declined to \$30.70 per ton in 1964, but has since moved up rather sharply.

Table 3-2
Labor Cost Per Man-Hour Worked in
Iron and Steel
1959 and 1968
(Dollars Per Hour)

	<u>1959</u>	<u>1968</u>	<u>Per Cent Increase</u>
Pay for time worked	\$2.49	\$3.44	38
Pay for time not worked e.g. holidays, vacations20	.34	} 138
Private welfare plans13	.44	
Compulsory government payments	<u>.04</u>	<u>.10</u>	
Total labor cost	\$2.86	\$4.32	51

Note: Average hourly earnings as reported by D.B.S. for the iron and steel industry were \$2.37 and \$3.28 per hour for 1959 and 1968 respectively.
Source: Prices and Incomes Commission.

Other Costs

Table 3-1 shows that cost of utilities and fuels increased to \$6.20 per ton from \$4.60 due to greater consumption, power rate increases and higher natural gas prices. Fuel oil is one of the few items that has recently declined in price.

Other manufacturing costs consist chiefly of maintenance and operating supplies. Here also costs per ton have risen more sharply than for either raw materials or labor, adding approximately \$3 per ton to operating costs between 1959 and 1968.

Non-manufacturing costs have risen even faster, rising to \$16.10 per ton from \$11.10 between 1959 and 1968. The major increase has been in depreciation of capital equipment which increased by \$3 per ton. The balance consists of additional selling and general expenses, interest on long-term debt and sundry costs.

In summary, the favorable experience with raw materials costs has helped offset adverse experience in other areas. The net increase in cost of sales was thus held to \$12 per ton of rolling mill shipments from 1959 to 1968, or approximately 11 per cent.

Productivity or Efficiency in the Steel Industry

Before turning to steelmaking costs in 1970 it is necessary to examine briefly the question of efficiency in the Canadian iron and steel industry. This is done in respect to both labor and capital inputs.

While efficiency in the steel sector is widely taken for granted, there is considerable difference of opinion over its measurement. Present statistical techniques and lack of sound data make it impossible to clarify the actual contributions of various factors to efficiency. Among these factors are the amount of capital assets available for each worker, the level of skill and effort of the work force, the degree of management skill, labor-management relations and technology.

A crude output-input ratio can be calculated by using raw steel production and average annual employment. A more refined ratio can be constructed from the industrial production index for iron and steel and man-hours paid of persons employed. D.B.S. recently completed such an analysis for iron and steel which indicates average annual growth in output per man-hour of four per cent for the period 1959-68. This reflects growth in output of 7.4 per cent per year and growth in persons employed of 3.4 per cent. (Appendix Table 3-1).

The D.B.S. report also shows the sharp year-to-year variations in this ratio. When allowance is made for changes in capacity utilization, these fluctuations are considerably reduced and a

smoother trend results. This is a reminder that output per man-hour is useful primarily in describing longer-term trends. The impact of technological factors brings about change across an industry in gradual fashion. Cyclical changes in output produce short-run volatility in output per man-hour.

In this study indexes of output per man-hour are useful mainly in helping to understand the trend in unit labor cost. Gains in output per man-hour exceeded gains in labor cost per man-hour in the early 1960s. This resulted in a reduction of labor cost per ton and thereby contributed to stable steel prices. From 1965 on labor cost per ton has climbed.

D.B.S. figures indicate that wage and salary costs per ton of steel were probably no higher in 1968 than in 1959 for the industry as a whole. These figures, however, are limited to wages and salaries only. Calculations based on total labor cost, including fringe benefits and compulsory government payments, indicate a rise in labor cost per ton of approximately 11 per cent over the same period.

Having regard to the difficulties of measuring long-term trends in output per man-hour due to changes in product mix, it can nevertheless be concluded that the trend rate is approximately four per cent per year for the last decade. This gain reflects the joint contribution of labor in combination with other factors of production. It is clear that the gain would not have been as large had capital and technology been held constant for the last decade.

Efficiency resulting from new capital investment is also pertinent to the present discussion of steel costs and prices. Although book depreciation charges are relevant to cost analysis, the growth in capital facilities lying behind depreciation should be examined.

The major steel companies in the period under review computed annual depreciation charges on a straight-line basis at approximately five per cent of book value of plant and equipment. Capital costs as measured by annual depreciation moved from \$6 to around \$9 per ton between 1959 and 1968. While depreciation thus appears to have risen by 50 per cent since 1959, this probably exaggerates the actual post-war trend because of the effect of changing tax provisions on accounting practices.

It is clearly evident, nevertheless, that the steel industry is becoming increasingly capital intensive. Growth in capital investment in constant dollars has been approximately eight per cent annually since 1959. (Appendix Table 3-2). This compares with an annual rate of growth in steel industry employment of 3.4 per cent.

Projected Steelmaking Costs in 1970

It is feasible to project steelmaking costs to 1970 even though 1969 was not a normal operating year. Preliminary 1969 cost data were obtained from a number of companies covering varying periods of the year. One major company estimated costs for the full year on the basis of 11 months experience. Using 1968 experience primarily, and some more current information, it was possible to construct a schedule of costs for 1969 as they probably would have been had output grown normally by five per cent over 1968, a rate indicated by recent trends in the industry.

For illustrative purposes it is assumed that steel shipments will rebound in 1970 from the strike-induced trough in 1969 in response to inventory rebuilding and a high level of activity in construction and durable goods. The major companies supplied projected steel sales data for 1970 which have been adopted with minor adjustments.

Assumptions are also made concerning operating ratios and output per man-hour. According to information supplied by major companies, the industry will probably operate during 1970 at ratios equal to or better than in 1968 as capacity increases are expected to lag behind sales growth. Partly as a result of this, output per man-hour is assumed to advance at the trend rate experienced in 1959-68, that is by four per cent annually. A continuation of technological improvement will further support the trend, as will existing opportunities for cost reduction on newer capital facilities not yet fully broken in. All companies will not advance on the same path, but analysis of individual operations suggests that this is a reasonable assumption for the industry as a whole.

Wage and fringe benefit increases under the U.S.W. agreements signed in mid-October have been costed out at approximately \$1.30 per man-hour worked. This is 63 cents in the first year, 35 cents in the second and 32 cents in the third. On a percentage basis this translates into increased labor cost per man-hour of approximately 30 per cent over the three-year period.

Labor cost has been projected in total dollar terms and in unit cost per ton for the three major companies. The method has been to estimate time worked and then apply labor cost per man-hour under existing and prior agreements adjusted for gains in output per man-hour at a rate of four per cent annually. Those employees outside United Steelworker bargaining units are expected to receive adjustments in their salaries comparable to union members. Labor cost per ton is thus expected to advance from \$36.80 per ton in 1968 to \$38.20 in 1969 and \$41.50 in 1970.

Were there to be no improvements in output per man-hour, labor cost per ton would increase at the same rate as labor cost per man-hour. The trend in output per man-hour established earlier, however, indicates that continued improvements in productivity should be recognized in this study.

Raw material costs are not expected to advance as fast as labor cost from 1968 to 1970. The outlook for ore, coal, scrap and other materials indicates that material costs per ton will rise 2-3 per cent in 1969 and 4-5 per cent in 1970. Raw material costs are projected to rise to \$53.80 in 1970 from \$50.20 per ton in 1968.

Other manufacturing and non-manufacturing costs combined are expected to advance from \$37.60 to \$39.40 per ton in the same period.

Total costs are projected to rise to \$134.70 per ton of rolling mill products from \$124.60, or by eight per cent, between 1968 and 1970. This is the net change after allowing for efficiencies in the use of materials and services. Some items will experience price increases well in excess of eight per cent.

Chapter 4

IMPACT OF PRICE AND COST CHANGES

A summary of findings of the review of recent price and cost increases in the steel industry.

Introduction

It was shown in Chapter 3 that unit costs per ton of steel are clearly on a rising trend. The results are summarized in Table 4-1.

In 1970, the first full year in which the recent price and wage changes become effective, unit costs are estimated at \$134.70 per ton. This is an increase of \$7.40 per ton over 1967, or about six per cent.

If 1968 costs are used as the basis for comparison with 1970, the increase is \$10.10 per ton or eight per cent. And if 1969 costs are used for comparison with 1970, the increase is \$6.70 per ton or five per cent. In the foregoing instances, labor costs account for one-third to one-half of the increase in costs per ton.

Table 4-1

Estimated Costs Per Ton of Steel Shipments
1967 - 1970

(Dollars Per Ton)

	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
Labor costs	38.80	36.80	38.20	41.50
Other costs	88.50	87.80	89.80	93.20
	<u>127.30</u>	<u>124.60</u>	<u>128.00</u>	<u>134.70</u>

Source: Prices and Incomes Commission

Anticipated increases in 1970 revenue, due to the 1969 price

adjustments, are estimated in Chapter 2 to be \$9.20 per ton of rolling mill sales, calculated as a weighted average covering all product groups.

Comparison of Cost and Price Changes

Because of the differences in costs per ton in each of the three prior years, the choice of a base year for comparison with 1970 will determine whether cost or price increases are the greater. Price increases exceed cost increases in relation to 1967 and 1969, while cost increases have the edge over prices in relation to 1968. Use of 1967 can be criticized because it was a year of declining volume, high costs and reduced profits. The situation was reversed in 1968, a good year for profits, and it can also be challenged. The year 1969 was not a normal year either, due to strike activity.

The foregoing shows the difficulty encountered in selecting a normal year for comparative purposes. Regardless of the base year chosen, however, the evidence presented here shows neither costs nor prices taking a commanding lead, but rather a process whereby continuing changes occur in both costs and prices during an inflationary situation. Cost increases range from five to eight per cent compared with price increases of six to seven per cent.

The Impact on Profits

The decisions taken with regard to prices and wages in 1969 will be reflected in profits in 1970 and for this reason expected profit performance has also been examined. Annual and quarterly reports of public companies were analyzed together with supplementary historical data supplied on request. A number of companies were also asked to project profits in 1970.

Corporate profit levels in the steel industry were above the 10-year trend in 1968 and the momentum carried over into the first half of 1969. No serious impairment of the combined profits of the three major companies was reported in regular quarterly statements. First half 1969 profit reported by the companies, and the pricing action and its timing, suggest that industry earnings were at an acceptable level until mid-year.

The effect of long strikes at Algoma and Stelco will be reduced after-tax returns in 1969 for these two companies. Corporate level analysis, however, indicates that price changes instituted by the industry in 1969 should result in profits per ton of steel sold in 1970 of approximately the same level as 1968, so far as the three largest companies in total are concerned. This reflects the earlier analysis which showed that cost and price increases are about offsetting in the last two years.

Summary of Findings

Total labor cost per man-hour, including wages, salaries, fringe benefits and compulsory government payments, is expected to increase by 30 per cent over the three-year period covered by the main labor agreements now in force. An increase of this size is well in excess of the four per cent average annual increase in output per man-hour which the industry experienced during the last decade. The result will be rising labor costs per ton in 1970, 1971 and 1972.

All other categories of steelmaking costs per ton are increasing as well.

It has also been found that these wage and other cost increases are being passed on to steel consumers. Price increases announced during 1969 amount to six to seven per cent on 1970 forecast shipments and are approximately in balance with cost increases between 1970 and the three prior years.

Chapter 5

STEEL AND INFLATION

The main economic issues raised by recent price and cost increases in the steel industry, viewed in the broader perspective of price and income trends in the Canadian economy as a whole.

Introduction

Whether or not they are regarded as being justified, in some narrower sense, the price and cost increases in the steel industry in 1969 were clearly inconsistent with reasonable stability of the general price level and with the national objective of moving toward a lower rate of over-all price increase in the months immediately ahead. This can be seen by contrasting the behavior of prices and costs during the period 1959-64, the most recent period of approximate stability in the general price level, with that of subsequent years and of 1969 in particular.

The Record of Rising Prices

The broadest commonly-used measures of price change for the economy as a whole are the Consumer Price Index and the implicit price deflator of the Gross National Product. Over the six-year period 1959 to 1964 the average annual rate of increase in the general price level as shown by these broad price measures was between one and 1.5 per cent. In certain areas of the economy, such as the service industries, prices rose more rapidly. In the steel industry as in most durable manufacturing industries, prices were unchanged or declined slightly during this period. (See Chart 2-1).

Since 1964 the price level has risen much more rapidly. From 1965 to 1968 the average rate of increase as shown by the broadest price measures was between 3.5 and four per cent annually. Prices of consumer durable goods rose by almost 1.5 per cent a year on average during this period, and prices of steel rolling mill products at an average rate of one per cent annually.

During the first nine months of 1969 the price situation deteriorated further. The broadest price measures were running, on

average, at close to 4.5 per cent above the level of the corresponding period of 1968. Prices of consumer durable goods were up about one per cent on average, while prices of steel rolling mill products were up almost three per cent. Following additional price increases in October and November, steel prices at the end of 1969 were more than six per cent higher than at the end of 1968, by far the largest annual increase of recent years.

Steel Prices and the General Price Level

Even with the 1969 increases, prices of rolled steel products - like the prices of most durable manufactured goods - have risen appreciably less than the prices of goods and services generally since 1959. In itself this is not *prima facie* evidence that cost and price developments in the steel industry have played a less important role in the inflationary process than they have in other industries. It is only to be expected that over any extended period of years prices in industries like steel will tend to rise less rapidly than the rise in prices generally. Indeed, for the general level of prices to remain unchanged over the years, steel prices would almost certainly have to be on a declining trend.

This is because steel is one of those industries in which it has proven possible over an extended period to achieve a higher than average rate of increase in output per man-hour through improvements in productive efficiency. There are other industries and occupations, notably some of the service industries, where there has been relatively little increase in output per man-hour over the years.

The benefits of productivity improvement in an industry may go entirely to its employees and shareholders in the form of higher wages and profits, or they may be shared in some degree with consumers through lower industry selling prices. If all prices in the economy were to rise at the same rate, wages or profits or both would rise more rapidly in the steel industry than in industries with little or no productivity improvement.

This way of dividing up the benefits of productivity improvement in the economy, however, could not be maintained indefinitely. Low-productivity industries would be faced with a growing need to match the large increases in steel wages and steel profits in order to retain or add to their supply of labor and capital. But in the steel industry the large increases in wages and profits would invite the entry of more and more labor and capital into steelmaking from other areas of the economy. In time the entry of new workers and new capital into steelmaking would bring about a growing surplus of steel and a slower rate of increase in steel

prices, while a growing scarcity of other goods and services would bring about a faster rate of price increase elsewhere in the economy. In effect, workers and shareholders in the steel industry would be compelled by longer-run market forces to share with the consumer, in the form of lagging steel prices, some part of the benefits available from rapid productivity improvement.

There is no valid economic reason which entitles workers in industries like steel to expect their wages to rise appreciably faster, over the long run, than the wages of workers of comparable skill in industries where productivity is growing more slowly. Nor can shareholders in industries like steel expect their return on capital to rise faster, over the long run, than profits in industries with less productivity growth.

The general price level is an average of the prices of goods and services produced over the whole range of industries and occupations. For the general price level to remain reasonably stable over time, prices in industries and occupations where rapid productivity improvement is feasible must be unchanged or declining in order to offset price increases in industries and occupations where there is little scope for such gains.

The Alternatives

It should not be surprising that the behavior of costs and prices in the steel industry in 1969 was inconsistent with an early return to stability of prices generally. The recent level of demand for the products of the Canadian steel companies has been high relative to their productive capacity. In addition, during 1969 the Canadian steel industry found itself in an unusually strong competitive position vis-a-vis United States and off-shore suppliers with respect both to prices and delivery dates. In these circumstances the companies were able to pass on substantial cost increases to the consumer with little difficulty.

Under what circumstances might it have been reasonable to expect a different outcome?

If government action to reduce the pressure of public and private spending throughout the economy had resulted in a marked weakening of demand for steel products during the course of 1969, it seems unlikely that such large wage and price increases would have occurred. This would be particularly true if steel demand and prices abroad had not been increasing. Given the momentum of the current inflation, however, such conditions might well have involved significantly less growth in output and employment in the economy as a whole than actually occurred.

Alternatively, a more moderate softening of the market for

steel products accompanied by a commitment on the part of both labor and management to limit their demands on the economy, as part of a general effort to scale down price and wage increases, could have achieved the same result with less adverse impact on output and employment.

Neither set of circumstances existed, however, at the time when the major wage and price decisions were being taken in the steel industry. Thus there was no reason to expect that the decisions taken in this particular industry would be more consistent with general price stability than those being taken at the same time in other areas of the economy.

The fact remains that during the last five years Canada has experienced the most serious and prolonged inflation of its modern peacetime history. As a result, the early restoration of price stability has become the most urgent short-term objective of national economic policy.

To this end federal authorities have adopted a substantially more restrictive posture in their conduct of monetary and fiscal policy designed to bring about, in the period immediately ahead, a progressive slowing of the recent rate of growth of public and private spending in Canada.

How severely these restraints on spending will have to be pressed and for how long will depend in large measure on how quickly the rate of increase in prices and money incomes responds to the softening of market conditions for the sale of goods and services.

The further ahead that substantial and largely- irreversible increases in costs and prices are built into the economic structure, the more protracted and painful must be the road back to price stability.

As long as current rates of increase in costs and prices continue in the face of weakening market demand, restrictive credit and budgetary policies will have to be maintained. But the quantity of goods and services sold is bound to be adversely affected and hence the volume of production and employment. The nation as a whole will suffer a loss of potential output and real income, and a heavy cost will be borne by those unlucky enough to fall behind in the income race, work short time, lose their jobs or fail to find employment.

The continued leap-frogging of prices and money incomes is at best a pointless and self-defeating process. No one wants to risk falling behind in the race if he can possibly avoid it and those with an opportunity to improve their relative position, even temporarily, are loathe to be the first to forego it.

For that reason, and with such widespread expectation of continuing inflation, the attempt to bring about a general scaling down of price and income increases through a softening of market demand seems likely to encounter strong resistance from individuals and groups possessing some degree of market power or political influence. The dilemma we face as a nation is clear. Inflation is clearly inequitable and poses too serious a threat to our future prosperity to be allowed to continue. But the very process of ending it is likely to cost our society an unnecessarily high price in terms of unemployment and lost output, unless some generally-acceptable way can be found to help bring about the necessary scaling down of price and income increases in a reasonably-prompt and equitable manner.

Statistical Appendix

TABLE 1-1
PRINCIPAL STATISTICS - IRON AND STEEL MILLS
1959 - 1967

MANUFACTURING ACTIVITY												TOTAL ACTIVITY		
Year	Estab-lish-ments	Production and Related Workers				Fuel and Elec-tricity	Materials and Supplies	Value of Shipments Own Manufacture	Value Added	Total Employees			Total Value Added	
		Number	Man-hours Paid	Wages	Thousands					Thousands of Dollars	Number	Thousands of Dollars		
1959	40	29,629	149,961	26,440	361,948	789,811	403,392	35,320	185,274	405,187				
1960	39	29,172	149,716	28,339	346,040	734,483	367,994	35,364	188,582					
1961	41	28,408	152,529	29,670	351,055	774,748	397,331	34,749	193,712					
1962	41	30,101	165,556	31,639	391,886	860,755	445,501	36,593	209,171	451,549				
1963	39	31,112	180,359	35,082	436,597	963,206	499,303	38,196	228,217	505,747				
1964	42	33,911	200,756	41,442	512,009	1,108,152	561,049	41,505	253,039	568,680				
1965	41	36,434	221,232	47,703	565,741	1,231,765	646,100	44,274	277,126	653,743				
1966	43	37,984	236,645	49,497	569,019	1,255,392	648,228	45,999	299,552	654,451				
1967	44	36,078	236,890	50,700	565,034	1,228,999	617,093	44,203	305,300	622,029				

Source: Dominion Bureau of Statistics

TABLE 1-2
PIG IRON AND RAW STEEL CAPACITY OF MAJOR PRIMARY
IRON AND STEEL PRODUCERS AT JANUARY 1, 1969

	(Thousand Net Tons)					
	<u>Algoma</u>	<u>Dofasco</u>	<u>Stelco</u>	<u>Sydney Steel</u>	<u>Others</u>	<u>Total</u>
Pig Iron Furnaces						
Number.....	5	3	5	2	11	26
Capacity.....	2,575	1,730	3,800	900	575	9,580
Per Cent of Pig Iron Capacity.....	26.9	18.1	39.7	9.4	5.9	100.0
Raw Steel Capacity						
Oxygen.....	1,450	2,270	—	—	80	3,800
Open Hearth.....	1,150	—	4,750	1,070	—	6,970
Electric.....	—	51	128	30	1,795	1,923
Steel Castings Capacity						
Electric.....	—	—	—	—	421	421
Total Steel Capacity.....	2,600	2,321	4,878	1,100	2,296	13,114
Per Cent of Steel Capacity.....	19.8	17.7	37.1	8.4	17.0	100.0

Source: Department of Energy, Mines and Resources.

TABLE 1-3
PRODUCTION OF PIG IRON AND
CAPACITY AND PRODUCTION OF RAW STEEL
1953-1968

(Thousand Net Tons)

<u>Year</u>	<u>Pig Iron Production</u>	<u>Raw Steel</u>		<u>Ratio of Raw Steel Production to Capacity</u>
		<u>Capacity</u>	<u>Production</u>	
1953	3,012	4,565	4,010	87.8
1954	2,211	4,770	3,014	63.2
1955	3,215	5,040	4,446	88.2
1956	3,568	5,334	5,181	97.1
1957	3,718	5,692	4,931	86.6
1958	3,060	6,113	4,262	69.7
1959	4,183	6,517	5,799	89.0
1960	4,229	6,899	5,709	82.8
1961	4,946	7,452	6,376	85.6
1962	5,277	7,951	7,049	88.7
1963	5,933	8,531	8,071	94.6
1964	6,541	9,696	8,968	92.5
1965	7,065	10,831	9,904	91.4
1966	7,217	11,447	9,814	85.7
1967	6,940	12,016	9,551	79.5
<u>1968</u>	<u>8,383</u>	<u>12,544</u>	<u>11,109</u>	<u>88.6</u>
Annual Rate of Growth				
1953-1968	<u>8.1%</u>		<u>8.0%</u>	

Note: Raw Steel Capacity is average of beginning and end of year capacity.

Source: Department of Energy, Mines and Resources.

TABLE 1-4

SHIPMENTS, TRADE AND CONSUMPTION OF

ROLLING MILL PRODUCTS

1953-1968

(Thousand Net Tons)

<u>Year</u>	<u>Domestic Shipments</u>	<u>Imports</u>	<u>Apparent Consumption</u>	<u>Exports</u>	<u>Total Canadian Mill Shipments</u>
1953	2,831	1,147	3,978	116	2,947
1954	2,340	817	3,157	25	2,365
1955	3,057	911	3,968	402	3,459
1956	3,859	1,612	5,471	194	4,053
1957	3,628	1,513	5,141	212	3,840
1958	3,138	979	4,117	223	3,361
1959	4,254	921	5,175	204	4,458
1960	3,672	843	4,515	666	4,338
1961	4,150	669	4,819	454	4,604
1962	4,514	618	5,132	609	5,123
1963	5,118	785	5,903	799	5,917
1964	5,926	1,349	7,275	784	6,710
1965	6,492	1,904	8,396	610	7,102
1966	6,456	1,248	7,704	673	7,129
1967	6,075	1,172	7,247	872	6,947
<u>1968</u>	<u>7,054</u>	<u>1,103</u>	<u>8,157</u>	<u>1,129</u>	<u>8,183</u>
Annual Rate of Growth 1953-68	<u>6.9%</u>		<u>5.6%</u>		<u>7.6%</u>

Source: Dominion Bureau of Statistics and Prices and Incomes Commission

TABLE 1-5
TOTAL MILL SHIPMENTS OF
ROLLING MILL PRODUCTS BY MAJOR PRODUCT GROUP
1953, 1959, and 1966-1968

Product Group	(Thousand Net Tons)				Annual Rate of Increase (Decrease) 1953—1968
	1953	1959	1966	1967	1968
Semi-finished shapes.....	160	242	326	344	544
Heavy structural shapes.....	214	182	433	374	460
Rails.....	299	286	282	279	231
Track material.....	79	99	63	57	55
Bar products					
Concrete reinforcing.....	164	321	656	495	647
Other.....	560	584	851	894	952
Total.....	724	905	1,507	1,389	1,599
Flat hot-rolled products					
Plate.....	n.a.	531	936	916	1,087
Sheet and strip.....	n.a.	670	1,157	1,193	1,506
Total.....	589	1,201	2,093	2,109	2,593
Flat cold-rolled products					
Cold-rolled and coated.....	514	859	1,454	1,435	1,581
Galvanized sheet.....	82	306	541	536	590
Total.....	596	1,165	1,995	1,971	2,171
Wire rods.....	286	379	428	425	529
Total Rolling Mill Products.....	2,947	4,458	7,128	6,947	8,183

*1957—1968

Note: Totals may not add due to rounding.

Source: Dominion Bureau of Statistics and Prices and Incomes Commission.

TABLE 1 - 6

APPARENT CONSUMPTION AND DOMESTIC SHIPMENTS OF ROLLING MILL
PRODUCTS BY MAJOR PRODUCT GROUP
1953, 1959, and 1966 to 1968

Product Group	(Thousands of Net Tons)										Annual Rate of Increase (Decrease) 1953 to 1968	
	Apparent Consumption					Domestic Shipments						
	1953	1959	1966	1967	1968	1953	1959	1966	1967	1968	Apparent Consumption	Domestic Shipments
Semi-finished shapes.....	131	198	297	235	313	103	196	276	206	304	11.5	11.1
Heavy structural shapes....	467	532	719	642	673	213	180	417	357	418	3.0	7.3
Rails.....	306	310	216	200	209	296	276	210	196	203	(2.8)	(2.3)
Track material.....	88	115	54	55	56	79	99	51	53	54	(5.1)	(4.9)
Bar products												
Concrete reinforcing.....	204	367	780	565	685	164	320	646	483	640	9.7	9.6
Other	620	682	992	1,021	1,063	540	572	802	814	859	4.4	4.2
Total.....	824	1,049	1,772	1,586	1,747	704	892	1,448	1,297	1,499	6.3	6.1
Flat hot-rolled products												
Plate.....	n.a.	624	1,120	1,094	1,203	n.a.	495	892	865	990	5.4*	8.0*
Sheet and strip	n.a.	679	1,135	1,135	1,384	n.a.	628	1,034	1,040	1,279	11.0*	11.3*
Total.....	1,122	1,303	2,255	2,229	2,587	586	1,123	1,925	1,905	2,269	6.6	9.8
Flat cold-rolled products												
Cold-rolled and coated..	638	952	1,300	1,263	1,376	483	809	1,228	1,196	1,316	5.6	7.2
Galvanized sheet.....	107	312	525	496	557	82	305	481	455	506	11.0	11.8
Total.....	745	1,264	1,825	1,759	1,933	565	1,114	1,709	1,651	1,822	6.8	8.2
Wire Rods.....	295	404	565	541	636	285	374	420	410	483	5.3	3.1
Total Rolling Mill Products	3,978	5,175	7,704	7,247	8,157	2,831	4,254	6,456	6,075	7,054	5.6	6.9

*1957-1968
Note: Totals may not add due to rounding.
Source: Dominion Bureau of Statistics and Prices and Incomes Commission.

TABLE 1-7

DISPOSITION OF DOMESTIC SHIPMENTS OF
ROLLED STEEL PRODUCTS—1964 and 1968

Steel Distribution Index No.	Principal Consuming Industries	1964		1968	
		M Tons	% Total	M Tons	% Total
4a	Wholesalers and warehouses—Steel service centres.....	947	16.0	{ 884	12.5
4b	Other warehouses.....				
6	Automotive and aircraft industries.....				
7	Agricultural.....	492	8.3	826	11.7
8a	Contractors—Building.....	186	3.1	157	2.2
8b	Construction—Public and utility.....	231	3.9	486	6.9
8c	Construction—Public and utility.....	29	0.5	61	0.9
9	Structural steel fabricators.....	884	14.9	895	12.7
10	Containers.....	414	7.0	484	6.9
11	Machinery and tools.....	231	3.9	270	3.8
12	Wire, wire products and fasteners.....	522	8.8	599	8.5
13	Natural resources and extractive industries.....	155	2.6	198	2.8
14	Appliances and utensils.....	217	3.7	176	2.5
16	Other metal stamping and pressing.....	450	7.6	368	5.2
17	Railway operating.....	206	3.5	256	3.6
18	Railroad cars and locomotives.....	83	1.4	59	0.8
19	Shipbuilding.....	109	1.8	45	0.6
20	Pipes and tubes.....	751	12.7	1,124	15.9
	Miscellaneous.....	20	0.3	82	1.2
	Total domestic shipments.....	5,927	100.0	7,054	100.0

Note: Totals may not add due to rounding

Source: Dominion Bureau of Statistics

TABLE 1-8

CAPITAL EXPENDITURE IN

THE IRON AND STEEL INDUSTRY

1950-1969

(Million Dollars)

	<u>Construction</u>	<u>Machinery and Equipment</u>	<u>Total</u>
1950	1.7	5.2	6.9
1951	28.9	21.4	50.3
1952	20.5	52.4	72.9
1953	11.9	38.0	49.9
1954	6.2	27.3	33.5
1955	6.6	27.9	34.5
1956	7.6	54.1	61.7
1957	14.4	56.6	71.0
1958	15.4	40.4	55.8
1959	15.0	59.7	74.7
1960	23.8	91.0	114.8
1961	13.0	54.6	67.6
1962	20.9	92.0	112.9
1963	28.3	83.8	112.1
1964	36.6	169.5	206.1
1965	34.4	128.9	163.3
1966	35.1	175.5	210.6
1967	19.1	103.8	122.9
1968*	13.3	72.5	85.8
1969**	16.8	132.9	149.7

*Preliminary

**Intentions

Source: Dominion Bureau of Statistics and Department of Industry, Trade and Commerce.

TABLE 1-9
RATIO OF AFTER-TAX INCOME TO EQUITY PLUS DEBT, REVENUE,
AND NET ASSETS FOR THREE MAJOR COMPANIES, 1959-1968

(Million Dollars)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Net Income after Taxes.....	63.9	46.4	60.9	67.9	82.7	94.7	99.9	92.1	85.5	126.1
Total Revenue.....	603.6	544.8	593.5	681.3	755.8	937.1	1,030.6	1,017.3	981.8	1,091.9
Net Assets.....	672.3	663.3	776.2	853.5	953.6	1,152.4	1,341.8	1,473.0	1,570.8	1,664.3
Shareholders' Equity plus Long Term Debt	527.7	546.2	617.0	663.9	726.6	851.9	963.8	1,017.2	1,085.2	1,152.9
<u>Net Income as % :</u>										
of Revenue.....	10.6	8.5	10.3	10.0	10.9	10.1	9.7	9.1	8.7	11.6
of Net Assets.....	9.5	7.0	7.8	8.0	8.7	8.2	7.4	6.3	5.4	7.6
of Equity + Debt.	12.1	8.5	9.9	10.2	11.4	11.1	10.4	9.1	7.9	10.9

Source: Annual Reports of Algoma, Dofasco and Stelco.

TABLE 2-1

CANADIAN AND UNITED STATES BASE PRICE COMPARISONS
AS AT JANUARY 1955, 1959, 1963, 1966-1969, AND DECEMBER 1969

	(Dollars per 100 Pounds)						
	1955	1959	1963	1966	1967	1968	December 1969
Structural Steel Shapes, Carbon							
United States—Pittsburgh, Pa. (U.S. \$).....	4.25	5.50	5.50	5.70	5.85	5.85	6.55
United States (Can. \$).....	4.11	5.30	5.90	6.13	6.34	6.32	7.05
Canada—Sault Ste. Marie (Can. \$).....	4.60	5.50	5.50	5.75	5.95	5.95	6.35
Steel Plate, Carbon							
United States—Pittsburgh, Pa. (U.S. \$).....	4.15	5.30	5.30	5.55	5.55	5.75	6.45
United States (Can. \$).....	4.01	5.11	5.69	5.97	6.02	6.21	6.94
Canada—Hamilton (Can. \$).....	4.95	5.45	5.45	5.45	5.45	5.45	5.85
Hot-Rolled Sheet, Carbon							
United States—Pittsburgh, Pa. (U.S. \$).....	4.05	5.10	5.10	5.30	5.45	5.45	6.15
United States (Can. \$).....	3.91	4.92	5.47	5.70	5.91	5.89	6.62
Canada—Hamilton (Can. \$).....	4.35	4.95	4.95	5.15	5.35	5.35	5.70
Cold-Rolled Sheet, Carbon							
United States—Pittsburgh, Pa. (U.S. \$).....	4.95	6.28	6.28	6.53	6.68	6.93	7.60
United States (Can. \$).....	4.78	6.06	6.74	7.02	7.24	7.49	8.18
Canada—Hamilton (Can. \$).....	5.50	6.35	6.35	6.60	6.80	6.80	7.20
Merchant Bars, Carbon							
United States—Pittsburgh, Pa. (U.S. \$).....	4.30	5.68	5.68	5.93	5.88	6.03	6.68 ¹
United States (Can. \$).....	4.15	5.48	6.10	6.37	6.37	6.52	7.19
Canada—Hamilton (Can. \$).....	4.60	5.40	5.40	5.65	5.65	5.65	6.20
Galvanized Sheets (1.25 oz.)							
United States—Pittsburgh, Pa. (U.S. \$).....	5.45	6.88	6.88	7.53	7.53	7.78	8.20
United States (Can. \$).....	5.26	6.64	7.38	8.09	8.16	8.41	8.83
Canada—Hamilton (Can. \$).....	6.10	6.70	6.70	6.90	7.00	7.00	7.45
Tin Plate Sheets (80 lb. base weight, .25 coating, over 29" to 33½" wide)							
United States—Pittsburgh, Pa. (U.S. \$).....	6.60	8.20	8.20	8.45	8.45	8.70	8.70 ²
United States (Can. \$).....	6.37	7.91	8.80	9.08	9.16	9.40	9.36
Canada—Hamilton (Can. \$).....	7.30	7.90	8.20	8.55	8.55	8.90	8.95

¹ Temporary price reduction; changed to \$5.85 in February 1969.

² \$9.20 effective February 2, 1970.

Source: Prices and Income Commission.

TABLE 2-2
TARIFF ITEMS APPLICABLE
TO SELECTED STEEL MILL PRODUCTS

<u>Tariff Item</u>	<u>Product</u>	<u>British Preferential</u>	<u>Most Favored Nation</u>	<u>General Tariff</u>
37700-1	Ingots, n.o.p.—per ton	Free	Free	\$5.00
37800-1	Semis (blooms, billets, slabs)	Free	5%	10%
37900-1	Bars or Rods (Hot-Rolled)	5%	10%	20%
37905-1	Bars or Rods (Cold-Rolled)	5%	12½%	25%
37915-1	Rods for Wire Manufacture —\$ per ton	Free	\$3.00	\$5.00
38000	Shapes and Sections Hot-Rolled or Cold-Rolled			
38001-1	General n.o.p.	5%	10%	20%
38002-1	Large Sections not made in Canada—\$ per ton	Free	\$5.00	\$20.00
38100-1	Plate, Hot-Rolled	5%	10%	20%
38201	Sheet and Strip			
38201-1	Hot-Rolled	5%	10%	20%
38202-1	Cold-Rolled	5%	12½%	25%
38203-1	Coated, Tin or Enamel	10%	12½%	25%
38204-1	Galvanized	7½%	12½%	25%
38400-1	Skelp	Free	7½%	15%
38700-1	Rails	5%	10%	20%

Source: Department of Industry, Trade and Commerce.

TABLE 2-3

DELIVERED PRICES OF SELECTED STEEL PRODUCTS FROM
CANADIAN AND UNITED STATES SOURCES—DECEMBER 1969

(Dollars per 100 Pounds)									
Net Prices				Freight to			Laid-Down Price		
U.S. Funds	Canadian Funds	Duty		Toronto	Montreal	Vancouver	Toronto	Montreal	Vancouver
Heavy Structural, 12" x 27" WF									
U.S.—ex Buffalo.....	7.15	7.70	0.77	0.56	0.99		9.03	9.46	
U.S.—ex Minnequa.....	7.25	7.80	0.78			1.56			10.14
Canadian—ex Sault Ste Marie.....		6.85		0.56	0.58	1.16	7.41	7.43	8.01
Hot-rolled sheet, 48 x .1345 x 240"									
Commercial quality, pickled									
U.S.—ex Buffalo.....	7.10	7.64	0.76	0.51	0.99		8.91	9.39	
U.S.—ex Geneva.....	7.20	7.75	0.78			1.35			9.88
Canadian—ex Hamilton.....		6.75		0.12	0.45	1.27	6.87	7.20	8.02
Canadian—ex Montreal.....		7.00						7.00	
Canadian—ex Sault Ste Marie.....		6.55		0.56	0.58	1.27	7.11	7.13	7.82
Cold-rolled sheet, 48 x .0299 x 120"									
commercial quality									
U.S.—ex Buffalo.....	8.50	9.15	1.14	0.51	0.99		10.80	11.28	
U.S.—ex Pittsburgh, Calif.....	8.50	9.15	1.14			1.22			11.51
Canadian—ex Hamilton.....		8.15		0.12	0.45	1.27	8.27	8.60	9.42
Canadian—ex Montreal.....		8.60						8.60	
Canadian—ex Sault Ste Marie.....		8.00		0.56	0.58	1.27	8.56	8.58	9.27
Galvanized steel sheet, coils 36" wide, 24 GSG, .0276" thick, comm. qual.									
U.S.—ex Buffalo.....	10.00	10.76	1.35	0.51	0.99		12.62	13.10	
U.S.—ex Pittsburgh, Calif.....	10.00	10.76	1.35			1.17			13.28
Canadian—ex Hamilton.....		9.40		0.12	0.45	1.35	9.52	9.85	10.75
Tin plate sheets (80 lb. base weight .25 coating, over 29" to 33½" wide									
U.S.—ex Pittsburgh, Pa.....	8.70	9.36	1.17	0.86	1.11		11.39	11.64	
U.S.—ex Fontana, Calif.....	8.70	9.36	1.17			1.06			11.59
Canadian—ex Hamilton.....		8.95		0.09	0.32	1.08	9.04	9.27	10.03

Note: All freight rates shown are rail rates with weight minimums, except the Sault Ste. Marie—Toronto and Hamilton—Toronto rates which are truck rates.
Source: Prices and Incomes Commission.

TABLE 2-4

**EUROPEAN CONTINENTAL STEEL EXPORT PRICE AND
CANADIAN BASE PRICE FOR PLATE, JANUARY 1957
TO JANUARY 1968, AND JANUARY TO DECEMBER 1969**

(Canadian Dollars per Net Ton)

		<u>European Continental Export Price, f.o.b. Antwerp, Belgium</u>	<u>Canadian Base price, f.o.b. Hamilton, Ont.</u>
January	1957	\$150.34	\$105.00
	1958	106.30	109.00
	1959	71.49	109.00
	1960	92.52	109.00
	1961	90.53	109.00
	1962	82.48	109.00
	1963	83.54	109.00
	1964	86.73	109.00
	1965	94.49	109.00
	1966	82.86	109.00
	1967	85.20	109.00
	1968	76.26	109.00
January	1969	106.07	109.00
February		112.09	109.00
March		117.21	109.00
April		126.93	109.00
May		130.93	109.00
June		140.04	113.00
July		151.95	113.00
August		156.49	113.00
September		150.63	113.00
October		148.63	113.00
November		149.81	113.00
December		153.60	117.00

Note: European price converted from U.S. dollars per metric ton.

Source: *Metal Bulletin* and Prices and Incomes Commission.

TABLE 3-1
INDEXES OF PRODUCTIVITY AND RELATED DATA
IRON AND STEEL MILLS, CANADA, 1959-1968

(1961 = 100)

	Output per person employed	Output per man-hour paid of persons employed	Output	Persons employed	Man-hours paid of persons employed	Salaries and (1) wages per unit of output
1959	95.0	93.0	97.1	102.2	104.4	98.8
1960	88.1	88.3	90.2	102.4	102.2	108.3
1961	100.0	100.0	100.0	100.0	100.0	100.0
1962	104.1	103.2	109.6	105.3	106.2	98.5
1963	109.7	107.1	120.6	109.9	112.6	97.7
1964	112.4	109.4	134.3	119.4	122.7	97.3
1965	120.2	119.1	153.1	127.4	128.6	93.4
1966	115.7	115.2	153.2	132.4	133.0	100.9
1967	116.4	117.9	148.1	127.2	125.7	106.4
1968P	132.9	134.2	169.7	127.7	126.4	98.9
Annual trend rate of change (%)	3.8	4.0	7.4	3.4	3.2	-0.1

(1)—Excludes fringe benefits

P—Preliminary

Source: Dominion Bureau of Statistics.

TABLE 3-2
RATES OF GROWTH OF MID-YEAR FIXED CAPITAL STOCK
IRON AND STEEL MILLS, CANADA, 1947-1968
(Based on Constant Dollars)

Period	Gross stock	Net stock		
		Straight line method	Sum of the years' digits method	
1947-68	8.9	7.7	9.0	
1947-59	9.4	8.1	10.6	
1959-68	8.7	7.2	7.8	

Sources: Dominion Bureau of Statistics

